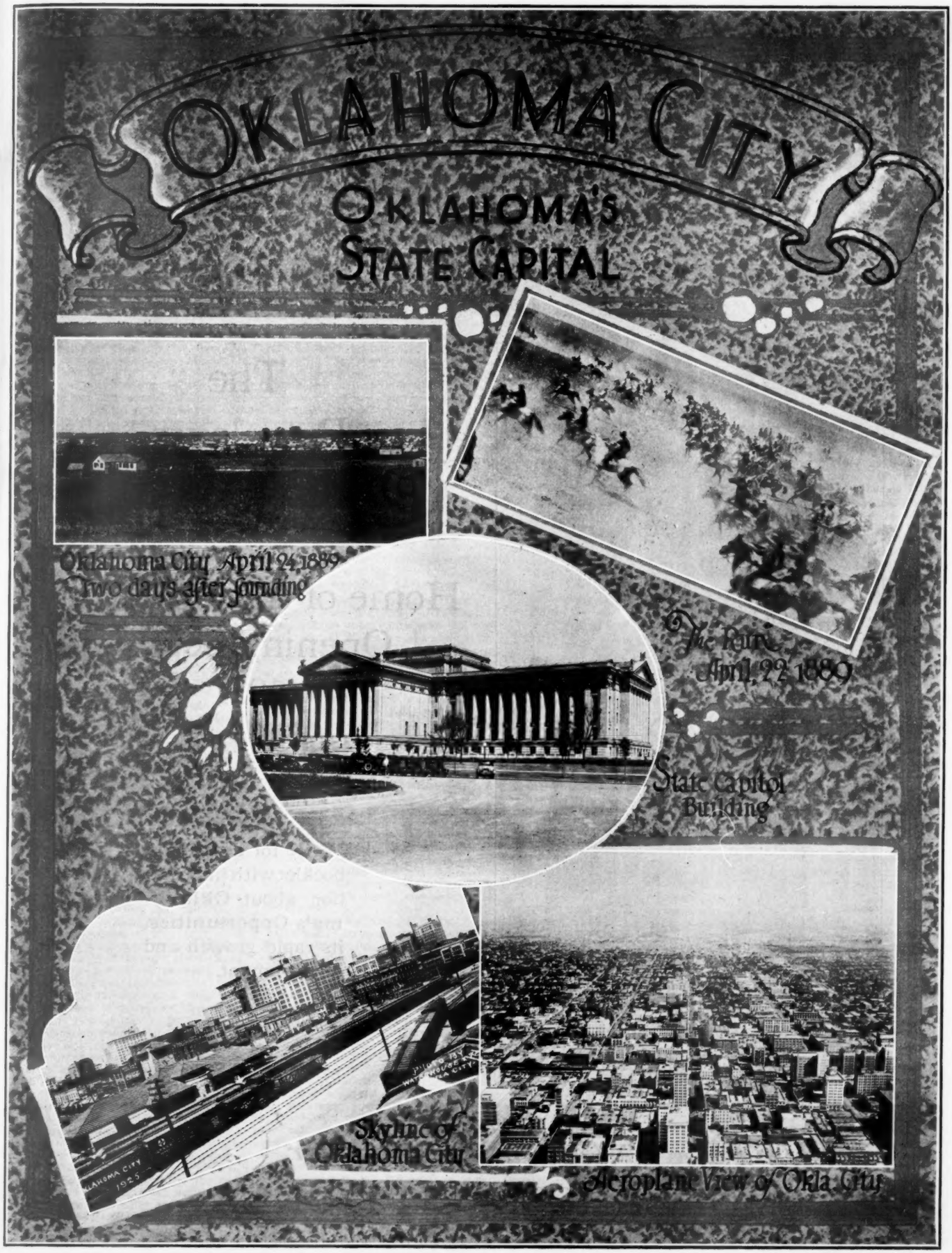
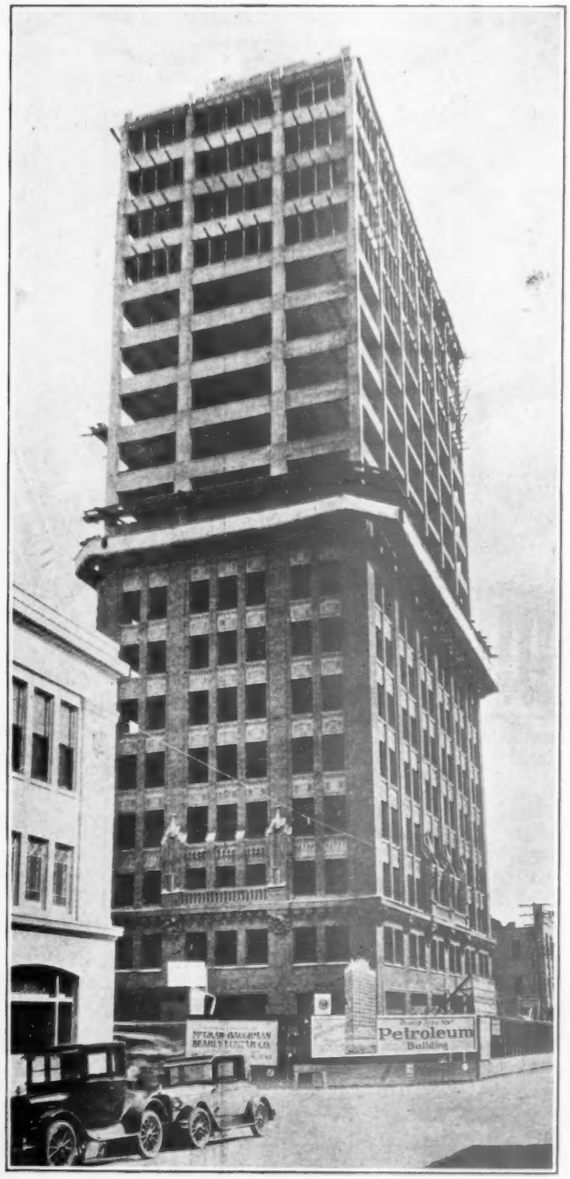

OKLAHOMA CITY
OKLAHOMA'S
STATE CAPITAL
Oklahoma City April 24 1889
Two days after founding
The Run
April 22 1889
State Capitol
Building
Skyline of
Oklahoma City
Aeroplane View of Okla City

OKLAHOMA CITY

Center Mid-Continent Oil Field

You should have an office in



The Petroleum Building

Home of the Fraternity Opening Sept. 1, 1927

Write for descriptive booklet with information about Oklahoma's Opportunities, its rapid growth and development.

Address
RAY LATTNER, *Manager*
OKLAHOMA CITY, OKLA.

Prosperous Present and Great Future

Oklahoma City Has Done Much in 38 Years and Is in a Position to Build Mightily in the Years to Come

By Ed Overholser
President Manager, Oklahoma City Chamber of Commerce

Friday, April 22, marked the thirty-eighth anniversary of the founding of Oklahoma City. Recalling the founding of this new metropolis, Dr. A. C. Scott, an eighty-niner, who still lives in Oklahoma City, paints a striking picture with the following words:

"The building of Oklahoma City began on the afternoon of April 22, 1889. At noon that day, Federal authorities gave way before the surging thousands who had massed along the borders of the new country to be opened to settlement by the whites.

"A certain area upon which today stands a city of 148 000 people was, on the morning of that day, an unbroken prairie, low and level in the loop of the North Canadian River to the south, but rising and more rolling to the north. The land had been burned clear, and the soft new grass of spring, sprinkled with multitudinous wild flowers, made the view a peaceful and charming one. But this was in the morning, and up to noon. By evening the grass and flowers were crushed beneath the feet of the many thousands of hurrying and excited men, and deeper scars of horses' hoofs and wheels of innumerable vehicles. In six hours the natural beauty of the scene was completely obliterated — beyond recognition or hope of repair.

"For Oklahoma City was born that day. Many cities, it is to be presumed, had their start on a certain day; but few, if any, have started with such a rush, and so dramatically. On the morning of April 22, 1889, Oklahoma City had a name but no inhabitants; in the evening it had a population of 10,000 persons and was permanently on the map. The tents that day pitched were soon replaced by wooden structures, and these in turn gave way to brick, granite, concrete and steel. Through the territorial days and since statehood, this city has grown with the state, always as the chief city, and today it is the Golden City of the Southwest."

City Has Grown With the State

When one contemplates the present development of Oklahoma City and remembers that it has been produced in only 38 years, it seems almost unbelievable; yet a consideration of the facts will remove this element of unreality. It is almost natural that in the development of such a large and rich new empire as the State of Oklahoma that there should have sprung up in its center a city in which would converge the activities necessary to bring about the miracle of transformation which has taken place in this great State.

Oklahoma City was builded through the development of the state of Oklahoma and its future growth and prosperity will depend to a great measure upon what takes place in the state as a whole. In an effort then to determine what Oklahoma City's future may be, let us look at the foundation upon which it is builded.

As the early settlers of Oklahoma found millions of acres of as fine agricultural land as lies beneath the sky, they found with that a climatic condition which permits the production upon a large scale of the basic agricultural products of both the north and south. Wheat is produced upon a scale that is not surpassed by but one other state. In cotton, the state, in this period of years, has grown to be second only to the immense area of Texas. No other state carries the possibility of these two great agricultural products upon a similar scale. In fact all the 19 major plow crops are grown extensively in this state while at the same time climatic conditions make it one of the most favorable states in the Union for the production of live stock.

At the same time those early settlers found an immense area underlaid with a fine quality of coal in quantities practically limitless so far as the next two or three generations are concerned. And they over-ran the greatest body of high grade petroleum which has so far been discovered on this earth, while the greatest lead and zinc producing area in the world was found within these borders.

Well Balanced Resources

A state may rank high in crop production, or it may rank high in mineral production, but rarely does a state rank high in both. Oklahoma not only stands near the top in production of both crops and mineral, but the two are quite equally balanced. Its development is thus based not on one corner stone, but on two, and they bear equal parts of the burden.

With such subsequent basic resources, with such possibility, needing only the labor of man to turn these resources into wealth uncounted, it is not strange that a state and a capital city such as Oklahoma and Oklahoma City have been produced. It would be strange, indeed, had they not been produced and stranger still will be the story if the next generation, starting from the achievement already accomplished, does not produce wealth and a material and spiritual development that will make what has occurred so far only minor transmissions of the marvels yet to come.

Transportation Advantages

That the future of Oklahoma City will unfold a story of commercial and industrial progress outstripping even the wonderful record of the 38 years since the city was born, is indicated conclusively to anyone who will give a few moments of study to its transportation advantages.

Oklahoma City is the point of convergence of the great arteries of commerce and travel traversing the great southwestern country. Conveniently accessible from anywhere, freight, express, mail and passenger service to Oklahoma City is excellent and with constantly improving freight rates, the city's potential trade territory is gradually and rapidly expanding.

The country's most conspicuous example of the growth of a community to metropolitan importance, with assurance of early attainment of a metropolitan population, not only without artificial stimulus but with seemingly impassable artificial barriers across its path, exists in Oklahoma City's record and position in the commercial world today.

Improving Freight Rates

Oklahoma City was born without benefit of freight rates. It was a way-station on the Santa Fe line from Kansas to the Gulf. Tariff makers had never heard of it except as a punctuation point on the time-card. It was about as important as a comma. It was not a full stop. But like the new-born babe that utters its wail of protest against conditions as it finds them, without bill of particulars, and eventually succeeds in attracting notice of those who tire of the noise, Oklahoma City early began registering a protest and conditions began to mend.

There were railroads to the north of her, railroads to the south of her, railroads to the east and to the west; but none had taken notice of her in writing the tariffs that control the pulse of traffic and breath of trade. Missouri and Mississippi River "gateways" to the southwest were established, and the current of traffic was flowing steadily and in constantly increasing volume, but none of the courses followed by those currents led to Oklahoma City. One led through Oklahoma City, but it was cheaper to ship beyond than to the new bidder for a share of the business of the Southwest.

Important Market from Start

Oklahoma filled up with farmers from the four corners of the land and these were in the market for food, implements, clothing and building materials. Brave, big-visioned business men came to Oklahoma City and opened merchandising places, but the farmer could buy in cities of adjoining states more cheaply than in Oklahoma City because Oklahoma City was included in geographical groups or sections to which rates were made from long-established jobbing centers outside of Oklahoma, and these jobbing centers were ready and able to fight to keep the advantage they enjoyed.

These great railroads connecting Oklahoma City by one or more routes with all the competing industrial centers of the west and southwest and with the "gateways" from the east have produced automatically a general rate readjustment that has counted incalculably in the advancement and growth of Oklahoma City, each shortline road between its own competing points and Oklahoma City establishing the rate for the longer line roads to meet. A readjustment of freight rates and an improvement in transportational facilities in and out of Oklahoma City are almost daily occurrences.

Important Recent Developments

Among the more recent important single developments have been the readjustment of freight rates into the great oil fields of western Texas and the improvement of passenger service between Oklahoma and that section.

The Oklahoma City oil operator can go to bed in a Pullman at midnight and spend the following day in any producing district of the Mid-Continent Field. If he is interested in Wyoming or on the Mexican Border he can spend one night en route to an intermediate point, have his field office representative do the same, and spend the following day in conference.

Metropolitan Service to Seminole-Earlsboro

Oklahoma City now enjoys fast and frequent transportation service to the world's greatest oil fields, Earlsboro-Seminole-Wewoka.

Through efforts of the Oklahoma City Chamber of Commerce, a new Rock Island passenger train was put into service between Oklahoma City, Shawnee, Earlsboro, Seminole, Wewoka and Holdenville on Sunday, March 20. This train leaves Oklahoma City at 6:00 a. m., arriving in Seminole at 7:59, and returning, leaves Seminole at 6:20 p. m., arriving in Oklahoma City at 8:40 p. m.

This new service makes it possible for those having business in these great fields to spend a full business day there and return to Oklahoma City at night. It also makes it possible for oil men to enjoy the advantages of a home in Oklahoma City without impairing their activities in the oil fields. Already families are moving to Oklahoma City as a result of this new service. With its inauguration, Oklahoma City now has metropolitan transportation facilities to these fields.

Railroads Converge Here

All the great roads entering the state converge within Oklahoma City. All the State of Oklahoma can be reached more quickly and economically by freight, express, mail or passenger service from Oklahoma City than any other city within or without the state.

With the greatly improved and rapidly improving rate status, and with the potential commercial development indicated by the figures cited in comparison with other cities which are recognized as established centers of business for the present and the future, it would seem to be necessary only for Oklahoma City to hold firmly to the helm of her ship of progress in order to make, surely and soon, the port of vastly greater importance and influence, with supremacy among the cities of the southwest a not too high or distant star as the objective of the voyage.

A study of any transportation map will show a remarkable geographical and commercial center for Oklahoma City. A complete circle of important commercial and industrial points is found within a radius of 600 to 700 miles from Oklahoma City.

Distribution Center for a Great Commonwealth

As years go by and with improving freight rates, Oklahoma City is rapidly growing in importance as a distributing center. Practically 75 per cent of all the merchandise bought in the state clears through the wholesaling and jobbing houses operated at Oklahoma City, in some lines approximately 100 per cent.

State's Auto Business Centers Here

A study of the records of the Highway Department of the state shows that 95 per cent of all automobiles bought in the state clear through state agencies maintained in Oklahoma City. In fact, state headquarters of all makes of cars bought in the state are maintained here and practically all makes of cars are sold here.

In automobile tires and automobile accessories, every state agency in Oklahoma operates its headquarters from this point. There have been several newly established agencies located here within the last few months.

In farm implements, hardware and machinery, there is no distributing house of importance located in the state outside of Oklahoma City.

In addition to the factories located here manufacturing furniture, matresses and bed springs, there are other wholesale houses for furniture and household goods. There are no other such institutions in the state outside of Oklahoma City, these houses serving not only all parts of Oklahoma, but distributing products in practically every state in the Union.

The wholesale grocery business for the state is controlled practically in its entirety by Oklahoma City wholesale and jobbing houses.

There are two large wholesale drug houses located here serving the entire state and parts of adjoining states. One of these houses is one of the largest to be found in the West.

There is one large wholesale dry goods house located here and several smaller wholesale ready-to-wear, millinery and shoe houses. The territory for these institutions covers the whole state and the western part of Texas, as well as parts of other states.

In all, including the manufacturing establishments that maintain their own wholesale departments, there are 1,200 wholesale and distributing houses located in Oklahoma City. The annual volume of business of these institutions exceeds well over $395,000,000 in 1925.

Industrial Growth Leads State

While Oklahoma is one of the half dozen states leading the Union in production of new wealth from agricultural and mineral products, it has at the same time an annual output from its manufacturing establishments exceeding that of 16 other states.

Between the Federal census years of 1900 and 1920, Oklahoma's manufactur-

(Continued on Page 94)

AMERICAN TANK CO.
TRADE
Quality
MARK
WHOLESALE RETAIL

THE American Tank Company is the oldest manufacturer of oil field equipment in Oklahoma City. We have been here and doing business continuously since 1919. We are manufacturers of the first bolted standard steel tanks with interchangeable sheets.

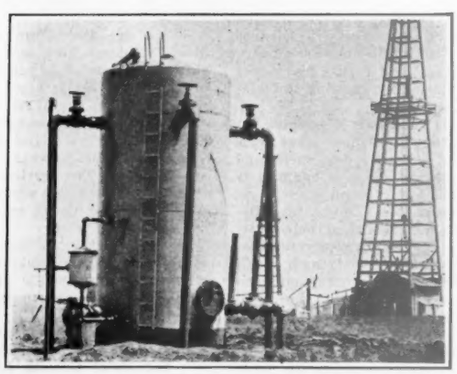
BECAUSE of our sales office at Tulsa and our branches throughout the Mid-Continent Field, we are in position to render quick and dependable service. Without obligation, we welcome correspondence with anyone interested in our products. Detailed information will be gladly furnished.

"Our newest branch—Pyote, Texas, to serve the Winkler County Field"

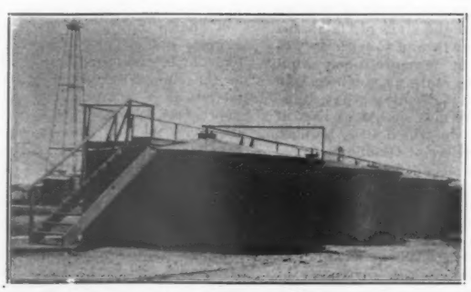
American Tank Co.
Oklahoma City

Oklahoma City Office and Plant
1526 W. 7th St.

Tulsa Office
940 Kennedy Bldg.



American Oil and Gas Separator. Sizes 4x12 ft., to 9x18 ft. Successful where used.



American Bolted Tanks. 40 to 5000 barrels capacity.

Skirvin Hotel
Mid-Continent Life Insurance Bldg.
Tradesmens National Bank
Huckins Hotel
Medical Arts Building.
The New Perrine Building
Looking North on Robinson St.
In the Heart of OKLAHOMA CITY'S business district
Federal Reserve Bank
First National Bank Bldg.

NOW—

Oklahoma City has an

OIL BANK

Oklahoma City is rapidly becoming the center of the great Mid-Continent oil field. The need for a really large bank in Oklahoma City, with ample capital and resources to accommodate the oil industry, was imperative.

With the consolidation of the American and First National banks into the greater American-First National Bank, Oklahoma City has an institution capable, and with the desire to take care of the financial needs of ALL business—particularly the petroleum industry.

CAPITAL
$3,000,000.00

The American-First National Bank compares in Capital, Surplus and Resources with any other bank in the Mid-Continent Field. It was formally opened in its new quarters in the American National Bank building on April 22nd, and is now ready to serve the oil men in a wide variety of capacities.

Resources Over
43 Million

AMERICAN-FIRST NATIONAL BANK

Oklahoma City

Oil Fields Nearing Oklahoma City

Four Trunk Lines of Railroad in Direct Touch With Important Fields. Future Operations Will Surround It

Written for the Oklahoma City Chamber of Commerce

When the Cudahys discovered oil in the Bartlesville district, in what is now Washington County, Oklahoma, and thus proved that the Chelsea district was not the only oil producing area in the state, it sent no thrill through any resident of Oklahoma City. What is now the capital city of the state was then a typical western boom town of 10,000 people, whose minds ran to cattle and agriculture and who knew nothing of petroleum, excepting that kerosene—maybe they called it coal oil—made a superior illuminant.

But that was nearly 30 years ago. Now if you go to Oklahoma City you can meet old-fashioned practical oil men and the new breed of highly trained technical men who are well versed in engineering, in geology and geophysics. And you will find that these men know the oil business from every angle and that they are as well posted on conditions of the trade as oil men anywhere. Furthermore, they will tell you in a manner most convincing because of their sincerity and the strength of their arguments that Oklahoma City is destined to take important rank among the oil centers of the Mid-Continent Field.

When oil was discovered in the Chelsea, Bartlesville and Nowata districts the fields were 150 miles distant from Oklahoma City. By 1900, there were only four pools in the state. Five years later oil had been discovered in 25 distinct places in Oklahoma, including six different spots in Marshall, Carter, Stephens and Kiowa Counties to the south and west of Oklahoma City and in Creek and Okmulgee Counties, which brought the northern development many miles closer to Oklahoma City. By 1910, there were 35 pools in the state and by 1915, 110 pools bringing the indications of oil as near the capital city as Pontotoc County, Okfuskee County and the border of Hughes and Seminole Counties and to the north in Kay, Garfield, Noble and Payne Counties.

Began to Take Notice

Oklahoma City began to take serious notice of the oil business by this time, but the citizenry was so busy with other things with which it was more familiar that it still played a waiting game. However, the merchants and wholesale houses had begun to feel the influence of the oil region business as the new oil pools and their accompanying oil towns sprang into being with their countless necessities which Oklahoma City was in a position to supply. Now there are over 250 pools in Oklahoma and within a 75-mile radius of Oklahoma City there are more than 700 wells drilling with many other derricks up ready to commence drilling. The western end of the great Seminole Field in Seminole County is inside the 50-mile radius. An hour and a half's ride by train puts one in the middle of the excitement in that field and it can be reached by motor in a 3-hour trip. In Seminole County are over 400 drilling wells. There are 30 drilling wells in Pontotoc and Garvin Counties; 52 in Pottawatomie County; 38 in Stephens and Cotton Counties; 56 in Carter County; 61 in Grady County; 21 in Hughes County; 16 in Lincoln County; 11 in Logan County; 14 in Payne County; 21 in Garfield County; with a scattering of wildcat drilling wells in central and western Oklahoma and seven wells drilling in Oklahoma County.

In Direct Touch With Many Fields

Oklahoma City is in direct touch with all the above field operations by rail and highway. In the territory within a 75-mile radius of the city the present day production of oil is approximately 495,000 bbls. out of a total of 730,000 bbls. in the whole state.

In addition to the great and small oil pools in the Oklahoma City trade territory, some of the very largest gas fields in the state are southeast of the city in Carter County and southwest of it in Grady and Stephens Counties.

It is the central point of a great distributing system of electric power with high voltage lines into prominent oil fields. In the Seminole Field, where a part of the motive power in compressor plants is electricity, an Oklahoma City company, the Oklahoma Gas & Electric Co., supplies the electricity which is generated in the capital city itself.

A Beautiful City

Oklahoma City is a well built, well laid out and beautiful city. It has been growing steadily ever since the homesteaders' rush into Oklahoma 38 years ago this month. It has been so prosperous and its growth has been so steady and rapid that it made no special effort to attract oil companies and oil men, until the oil business began to almost encircle it.

Oklahoma may be said to constitute a great basin. The exploration for oil and the later development has been around the rim of the basin. Oklahoma City is the center of the basin and the development of the great petroleum area has been steadily toward the center. This is true of the northern development which began in Kay County and spread southward; of the Osage and Cherokee Nation development, which spread southward into the Creek and Seminole Nations, and the southern development at Healdton which spread westward and northward. This leaves only the great central and western territory undeveloped and there is not a county north and west of Oklahoma City which can be condemned as nonoil bearing, nor is there reason to condemn all the territory between Oklahoma City and the present known oil fields to the east, south and southwest.

Drilling Near Oklahoma City

One of Oklahoma City's best known oil men is Irving Perrine, geologist, who is deeply interested in the Capital City's endeavor to become known as one of the Mid-Continent's oil centers.

"In an effort to estimate the probable future activity in oil well drilling within the near vicinity of Oklahoma City within the next five years, two townships, 7 North, 4 East, and 9 North, 5 East, were selected and the date of expiration of each lease in these two townships was noted," writes Mr. Perrine.

"In these townships practically every acre has been under lease for the last 10 years. Most of the five-acre leases are lapsing now and it would seem apparent that there is scarcely a lease in either of these two townships that is not worth drilling rather than allowing the lease to lapse. This especially since it would be practically impossible for any of the leases to be renewed for a moderate price.

"In 1927, 60 wells must be drilled in these two townships; by 1928, 42 wells; in 1929, 72 wells; by 1930, 110 wells, and by 1931, 91 wells. Otherwise, these leases will lapse. What applies to these two townships also applies to a large number of other townships within the same general vicinity.

"The purchases of royalty in these townships have become so numerous that it would be an extremely difficult task to renew almost any of these leases as each individual royalty owner would have to sign the lease as well as the original farmer or owner of the property. In the future, in areas located in Pottawatomie and Seminole Counties, the larger oil companies are going to find it more and more difficult as time goes on to renew leases lapsing in this important oil territory. So we have every reason to believe that most of the major oil companies at least will drill in territory as favorable as in these two townships rather than allow their leases to lapse. Other townships in the same general region will naturally enter a large number of other tests which must be drilled within the next five years unless the leases are renewed.

"From a study of geological conditions within a radius of 50 miles of Oklahoma City, it is becoming increasingly evident that there is a likelihood of not one but possibly a dozen pools as large or larger than the Earlsboro or Seminole Pools being developed within this region. West of the Seminole area and in the immediate vicinity of Oklahoma City, tens of thousands of acres of leases have been purchased within the last six months. Many hundreds of these will be tested within the next few years, as well as those farther east."

Excellent Geographical Position

Oklahoma City appreciates its splendid geographical position in relation to the Oklahoma oil regions of the future and it is prepared to take advantage of it. It is reaching to out for oil men. It wants oil companies to establish headquarters there. It wants more oil field supply shops and distributing plants. Like Houston, Dallas and Fort Worth, Tex., it was built on a foundation that had nothing to do with the oil industry, but it now offers a completely organized city—with a definite society, every means of comfortable living and with facilities for education and recreation.

Already a Good Start

Oklahoma City has already a good start in its endeavors to become a recognized oil center of importance. The Magnolia Petroleum Co., one of the largest producing companies in the Mid-Continent Field with leases in Kansas and many Oklahoma fields, operates its Kansas-Oklahoma properties from Oklahoma City. The Texas Company's marketing center for the Oklahoma territory is Oklahoma City, where its district manager has his headquarters and home. T. B. Slick, the largest individual oil producer in the world, has his principal offices in Oklahoma City. Anderson & Pritchard, with refineries in Oklahoma and Texas, have their executive offices in the capital city. The Buttram Petroleum Corp. Homa-Okla. Oil Co., Watchorn Oil & Gas Co., Goldelline Oil Co., Petroleum Reclamation Co. (which operates in Bradford, Pa.), W. R. and W. S. Ramsey and J. K. D. Shaffer, large individual oil producers, are among those showing a preference for Oklahoma City as headquarters.

The Hughes Tool Co. has a large plant for the manufacture and distribution of its drilling tools and other field supplies. The Boardman Co. manufactures tanks for filing stations and tank wagons; the American Iron & Steel Co. makes a varied line of field supplies, and the American Tank Co. manufactures tanks and gas separators which are shipped to many distant fields.

Future Oil Fields

The big exploration and development campaigns of the immediate future will be in that area lying between the Seminole Field, in Seminole and Pottawatomie Counties, and the Duncan district, in Stephens County. There is a world of promising territory along this line which will take years to develop. It is in Oklahoma City territory. In the distant future will come the exploration of the central and western counties, with all of which Oklahoma City is in direct touch. Oklahoma City may well view the future of the oil business in the state with an eye to its own prosperity.

UNIVERSITY OF OKLAHOMA TRAINS YOUNG MEN FOR THE OIL BUSINESS

The University of Oklahoma, located at Norman, is a 30-minute trolley ride from Oklahoma City. It is one of the leading—if not the foremost—petrological schools in the United States.

The Department of Geology of the University of Oklahoma, has had its part in the development of the oil industry, particularly in the Mid-Continent Field. Starting with a handful of students under the tutelage of Dr. C. N. Gould in 1901, when the department was first established, it has endeavored to keep pace with the rise of the oil industry, and at the present time 230 students are specializing in geology, while 750 others are taking some work in the science. In 1901, Doctor Gould succeeded in interesting a number of young men in the science long before any particular application of geology to oil had been worked out. When Doctor Gould left the department to become director of the Oklahoma Geological Survey, in 1908, a number of students were beginning to learn that the principles of geology might be applied to the finding of petroleum. In the next few years the University enrollment increased rapidly, and the department began to graduate a number of men each year who had specialized in geology. When C. H. Taylor succeeded Doctor Ohern as head of the department, in 1911, a number of the young geologists, now rather prominent in the Mid-Continent Field, were listed as graduates of the institution. Frank Buttram, president of the Buttram Petroleum Co.; E. L. DeGolyer, president of the Amerada Petroleum Corp.; J. B. Newby, L. E. Trout, J. M. Herald, J. R. Crabtree, Lewis Roark, R. L. Garrett, B. C. Belt, Fritz Aurin, Luther White, and Glenn Clark, and a number of other names familiar to geologists of the Mid-Continent Field as well as in foreign fields, were a few of the graduates during this period of time.

Rapid Increase in Enrollment

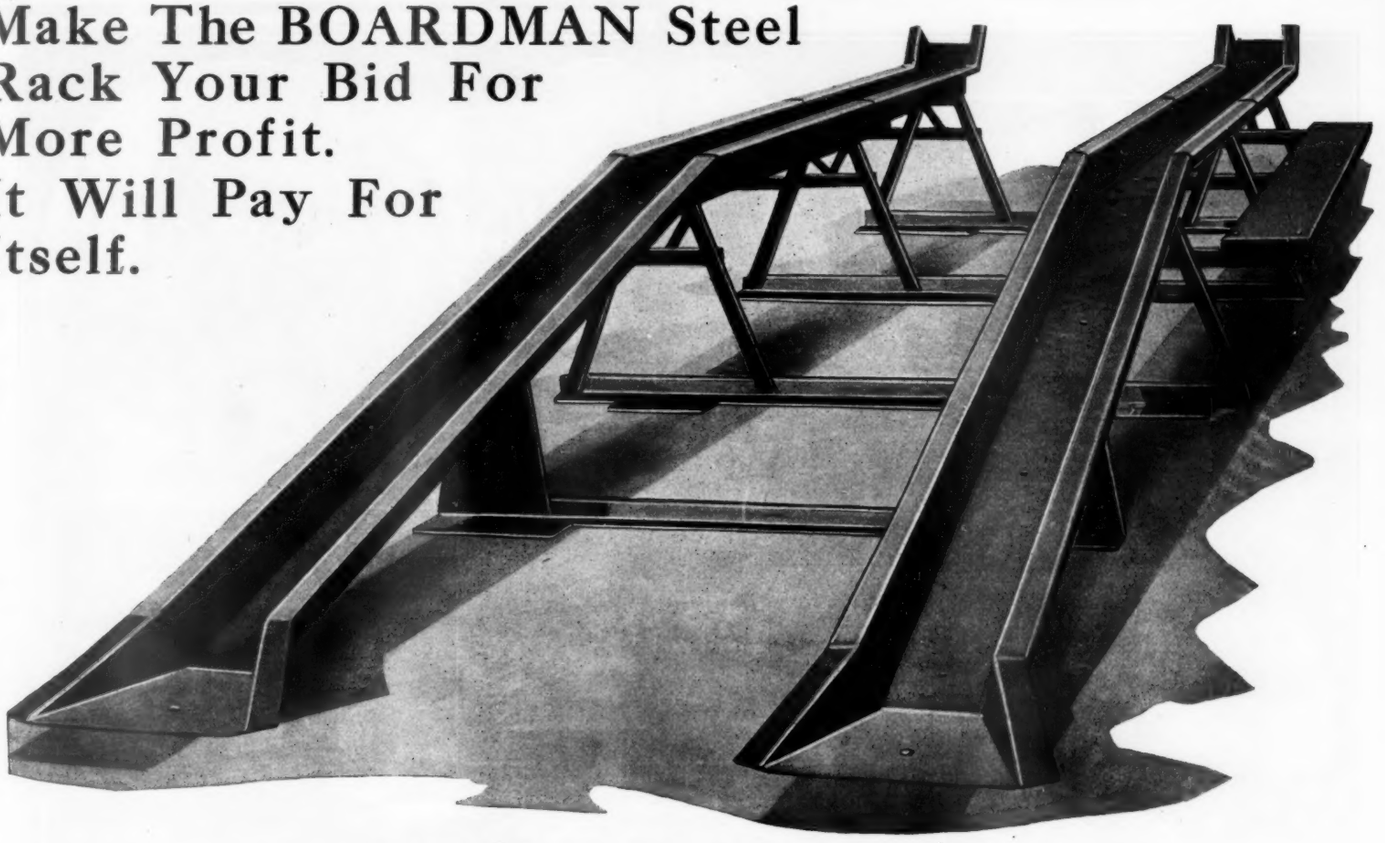
At this time the faculty of the department still consisted of but two men, C. H. Taylor, now a capitalist of Oklahoma City, and Dr. Irving Perrine, now a consulting geologist of Oklahoma City. The succeeding years were marked by a rapid increase in enrollment, and numerous additions to the faculty. While Dr. J. B. Umpleby, now of Oklahoma City, president of the Goldelline Oil Co., was head of the department for a period of five years, the oil industry was undergoing exceptional development, especially in the Mid-Continent Field, and the department contributed large numbers of its graduates to various positions, chiefly with the geological staffs of the petroleum companies. This growth has continued since the resignation of Doctor Umpleby in 1924, although emphasis is now being placed upon graduate work, and a five-year course is becoming more popular than the former four years training.

The Department of Geology was given the rating of a separate school in Feb-

(Continued on Page 94)

more representative
BUSINESS BLOCKS in
the
CAPITAL CITY
The Colcord Building
Petroleum Bldg.
Looking North on N. Broadway
Levy Bldg.
Southwestern Bell Telephone Bldg.
above McEwen-Halliburton Dry Go
Braniff Bldg.
Kerr Dry Goods Company Bldg.
Herskowitz Building

Make The BOARDMAN Steel Rack Your Bid For More Profit. It Will Pay For Itself.



THE BOARDMAN COMPANY
OKLAHOMA CITY

W. R. RAMSEY

Oil Producers

W. E. RAMSEY

General Offices

Braniff Building Oklahoma City, Okla.

A few of
OKLAHOMA CITY'S
many
beautiful
HOMES
Res. John A. Brown
Frank L. Anderson Res.
W. T. Hater Res.
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Kee R. Mc Kee Res.
Above
Home of
Chas. W. Cutter
W. R. Ramsay
Res. of
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Anderson-Prichard Oil Corporation

Colcord Building

Oklahoma City, Okla.

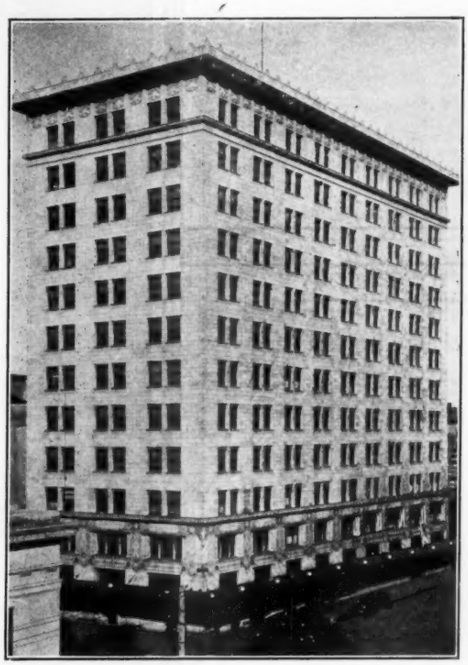
Producers and Refiners

Refineries—

Cyril, Oklahoma

Colorado, Texas

Wichita Falls, Texas



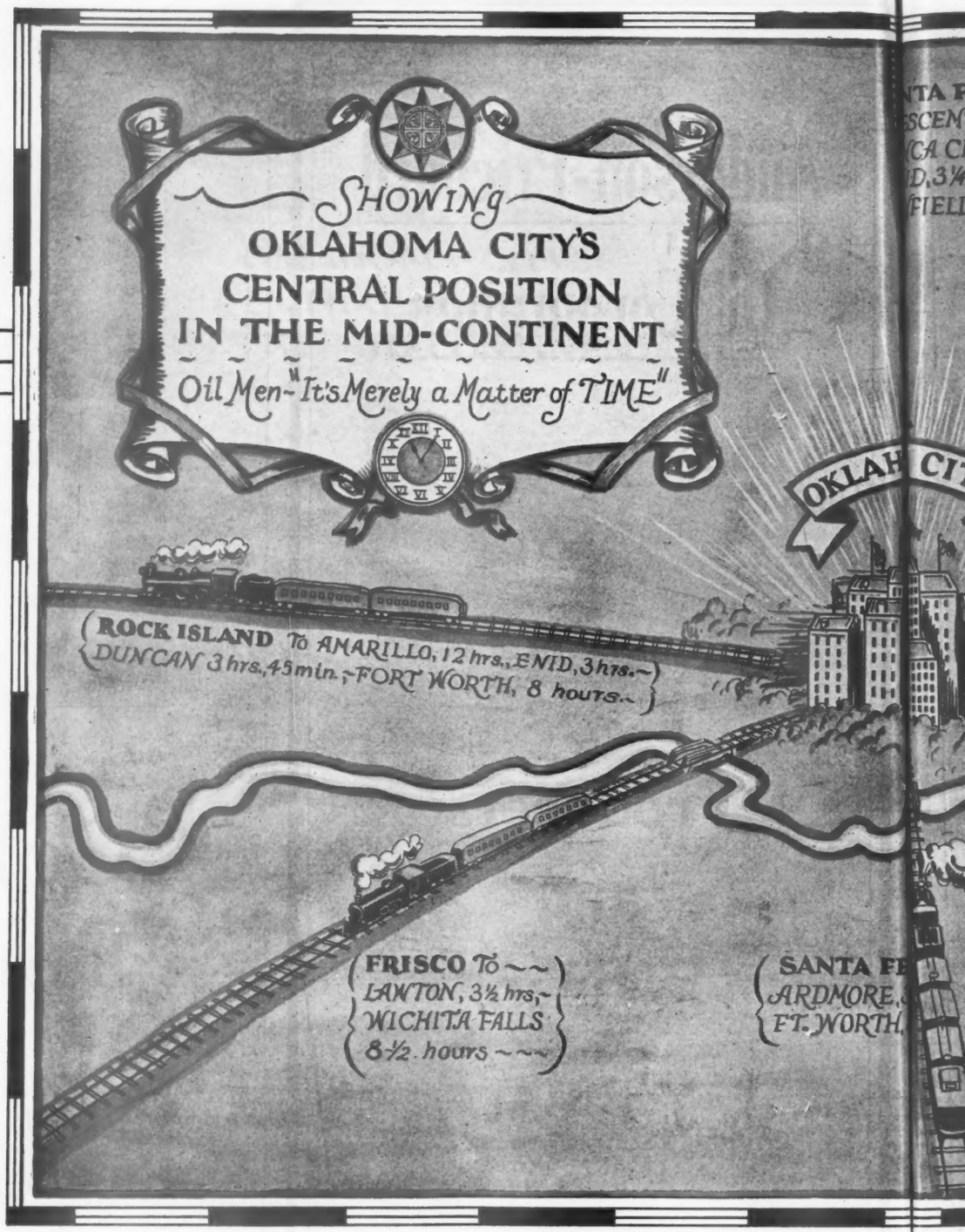
Colcord Building

Offices That Are Business Homes

L. D. CALLAHAN, Manager

Oklahoma City,

Oklahoma



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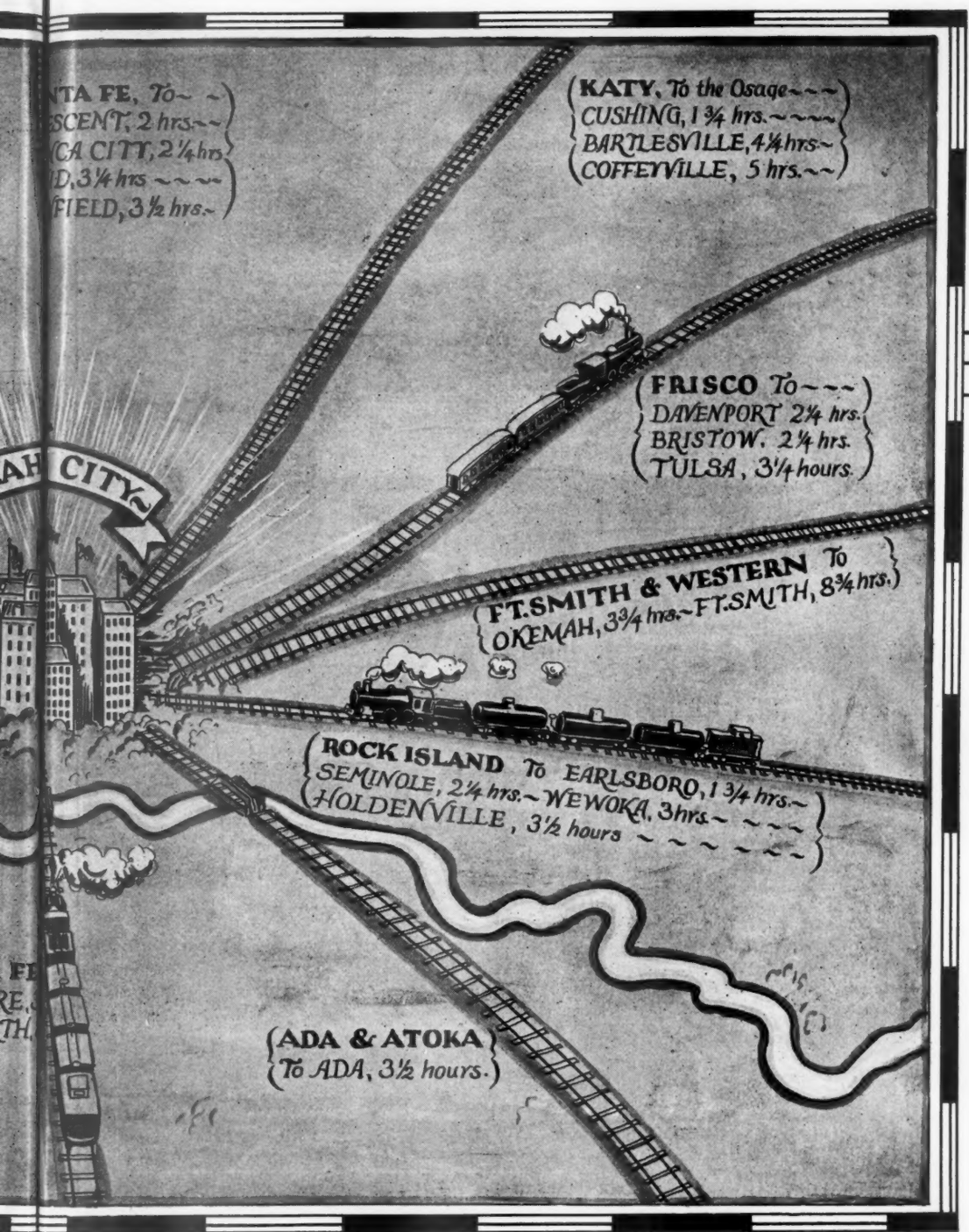

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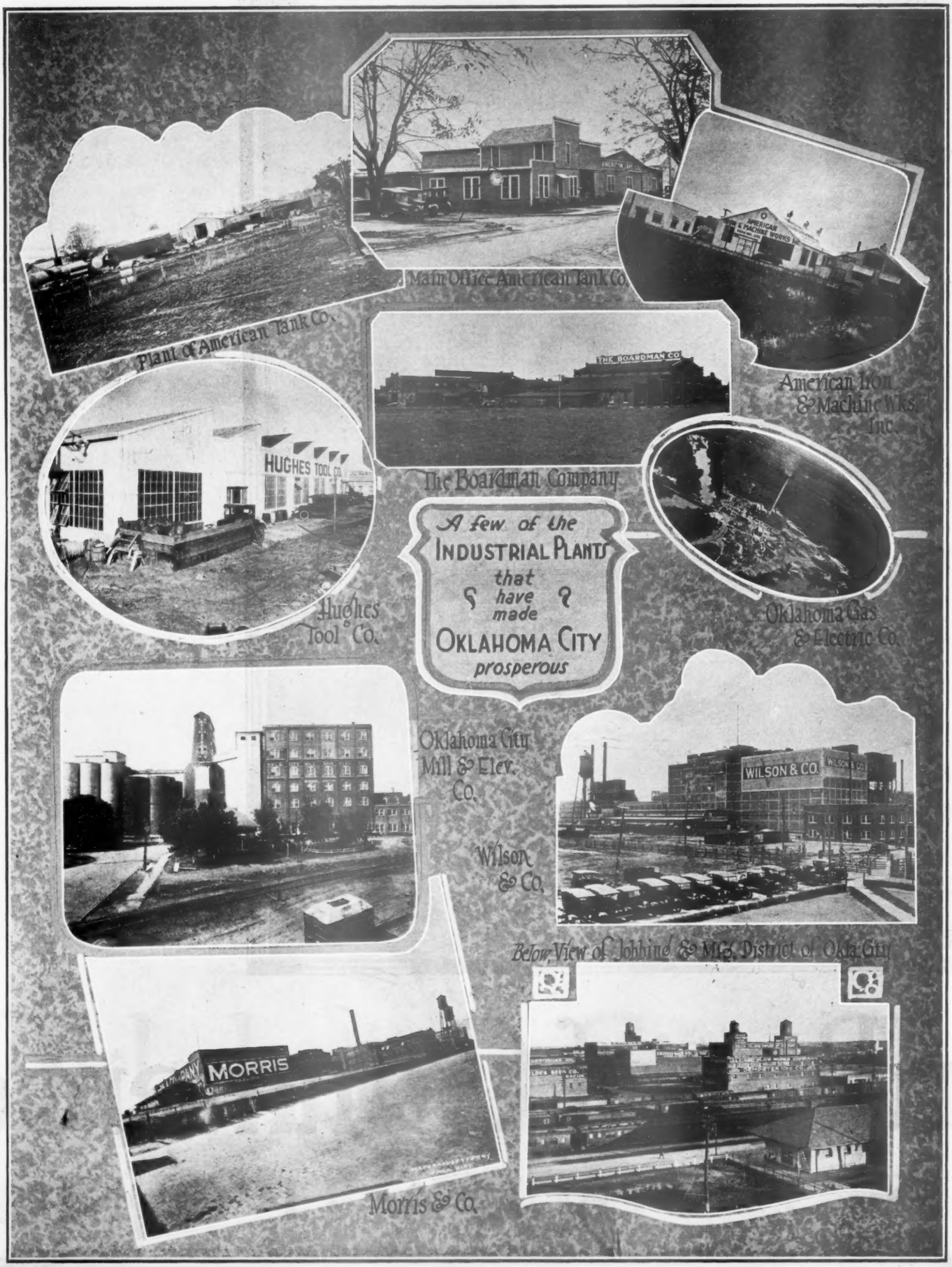
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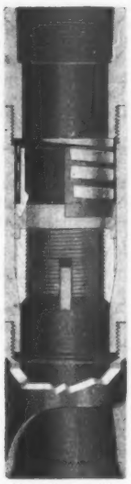
Main Office American Tank Co.
AMERICAN IRON & MACHINE WORKS INC.
American Iron & Machine Wks. Inc.
THE BOARDMAN CO.
The Boardman Company
HUGHES TOOL CO.
Hughes Tool Co.
A few of the INDUSTRIAL PLANTS that have made OKLAHOMA CITY prosperous
Oklahoma Gas & Electric Co.
Oklahoma City Mill & Elev. Co.
WILSON & CO.
Wilson & Co.
Below View of Jobbing & Mfg. District of Okla. City
MORRIS
Morris & Co.

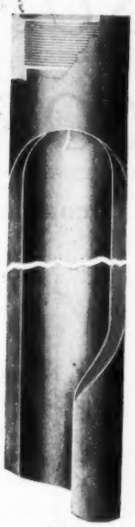
"American Products for Perfect Performance"



Overshot with Standard Guide (Patented)

TYPE F Milling Shoe Teeth on Bottom and Outside

TYPE E Milling Shoe Teeth on Bottom and Inside (Patent Applied for)



Wall Hook

The American Overshot

Releasing and Circulating With Milling Shoes and Wall Hook

Made to catch 2½, 3, 4, 5 and 6 inch drill pipe, tool joints and couplings.

TYPE "B"

Female Die Nipple with Protection Ring

American Oil Field Tools

- American Releasing and Circulating Overshots
- American Rock Bit Wrenches
- American Milling Shoes
- American Flexible Coupling for Rock Bit Lubricators
- American Paraffin Bits
- American Female Die Nipples
- American Tapered Taps
- American Forged Steel Subs
- American Rotary Shoes
- American Cone Fishing Baskets
- American Steam Lubricators
- American Steel Tool Houses
- American Forged Steel Wall Hooks
- American Rock Bit Breakout Blocks
- American Rock Bit Cone Fishing Sockets
- American Combination Reverse and Throttle Levers
- American Side Tracking Mills
- American Rock Bit Lubricator Wash Pipe Attachments
- American Rotary Milling Tools
- American Myracle Sucker Rod Sockets

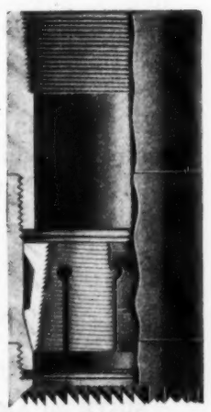
American Flexible Coupling for Rock Bit Lubricator (Patent Applied for)

American Rock Bit Breakout Block (Patented)

Manufactured by

American Iron and Machine Works, Inc.

Oklahoma City, Okla.



American Rock Bit Cone Fishing Socket (Patent applied for)

SUNRISE OIL CORPORATION

(INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE)

Officers

J. W. HARRELD - - - - - - - President
Formerly successful independent oil operator and United States Senator from Oklahoma

T. H. VAUGHN - - - - - Vice-President
Oil operator

THOS. H. OWEN - - - - - Vice-President
Formerly Chief Justice Supreme Court

JAS. R. ARMSTRONG - - - Vice-President
Formerly Presiding Judge Criminal Court of Appeals

W. A. MATLOCK - - - - - Vice-President
Stocks, bonds and oil operator Denver, Colorado

S. A. APPLE - - - Secretary and Treasurer
Experienced Oil Operator

Directors
J. W. HARRELD
T. H. VAUGHN
THOS. H. OWEN
JAS. R. ARMSTRONG
W. A. MATLOCK
S. A. APPLE
R. E. BRITTAIN
DEAN M. STACY
GEO. H. BURRESS
THOS. S. HARRISON

Geologists
DEAN M. STACY
GEO. H. BURRESS
THOS S. HARRISON

Executive Committee
J. W. HARRELD
S. A. APPLE
JAS. R. ARMSTRONG
T. H. VAUGHN
R. E. BRITTAIN

This Company is actively engaged in acquiring production leases and royalties in the Mid-Continent and Texas areas.

SUNRISE OIL CORPORATION

SUITE 301 AMERICAN NATIONAL BLDG.

PHONE WALNUT 3151 : OKLAHOMA CITY

YOUNG MEN TRAINED FOR THE OIL BUSINESS

(Continued from Page 85)

ruary, 1927, and the faculty now consists of Dr. V. E. Monnett, head of the department; Dr. C. E. Decker, in charge of paleontology; Dr. A. J. Williams, in charge of beginning work and general geology; Dr. S. Weidman, petrography; Dr. G. E. Anderson, sedimentation and subsurface geology; Dr. F. A. Melton, stratigraphy; Prof. C. J. Bollinger, geography; Prof. O. F. Evans, meteorology; Prof. C. A. Merritt, mineralogy; Prof. W. F. Cloud, Miss Ruth McDill, R. L. Six, L. S. Brown, J. A. Stone, instructors in beginning geology.

Broadening Its Field

Especial emphasis has been given in the past two years to courses in microscopic paleontology, sedimentation, petrography and subsurface geology. In 1925, the Department of Geology was greatly strengthened by the addition of a School of Petroleum Engineering in the College of Engineering of the University. This school, under the direction of Prof. H. C. George, includes Prof. Fred Padgett, and Prof. W. F. Cloud on its teaching personnel, and supplements the work offered by the School of Geology by taking up the problems of the petroleum industry connected with the production of oil. The Oklahoma Geological Survey, under the direction of Dr. C. N. Gould, is housed in part of the Geology Building, and is a very valuable adjunct to the department, in addition to being an entirely separate, important organization in the State.

Hundreds of Trained Oil Men

The School of Geology of the University of Oklahoma feels that it has made a notable contribution to the petroleum industry through the hundreds of graduates and former students that have taken positions of major and minor importance throughout the industry. Like all other professional schools, its graduates require the background of years of actual field practice before they can be recognized as professional men, but the advantages of the fundamental training received at some universities is appreciated by practically all men in the geological profession.

Attention is being directed more and more to research work, and at the present time, especial emphasis is being directed, in the University of Oklahoma, upon graduate work where the students will have an opportunity to pursue research as well as advanced courses giving them special preparation along certain lines of interest.

Two years ago C. J. Wrightsman of Tulsa recognized this trend, and established the C. J. Wrightsman Fellowship, which makes it possible for a student of ability to continue his graduate work. Other fellowships are now available, and it is hoped that many more will be established in order to permit the men of ability of Oklahoma, as well as of other states, to put their time to advantage in solving some of the countless problems of Oklahoma geology.

PROSPEROUS PRESENT AND GREAT FUTURE

(Continued from Page 81)

ing business grew from a capitalization of $4,054,391 to a capitalization of $277,034,000. The value of Oklahoma manufacturing products produced annually during the same period increased from $8,133,936 to $401,363,000 and the rate of growth in industrial lines has been approximately as great since the 1920 census.

From the start, Oklahoma City has maintained a leadership for the state in manufacturing as well as other lines. In 1910 the value of products of the industries of the city was $7,868,000. Ten years later the Federal census reported $69,971,000. This did not include the output of packing plants and other industries just outside the city limits which had an output of $70,000,000 the same year, making a total of $139,971,000 for that year, equaling 33⅓ per cent of the entire output of all the manufacturing plants of the state.

Oklahoma City has grown tremendously, however, as an important point for manufacturing purposes in the last five years. Today, there are 446 manufacturing industries located here with an output in 1926 exceeding $185,000,000. This is about 40 per cent of the entire output of the state. This includes, of course, institutions located just outside the city limits, but completely integrated with it, like the packing plants and others.

While the products of the city's industries are chiefly distributed in Oklahoma and adjoining territory, in many lines the products are shipped to all parts of America and in some lines to all parts of the world.

These institutions employ about 8,500 people, supporting a population of approximately 28,000.

Among the principal industries are the two immense packing plants, automobile assembling and body manufacturing establishments, flour mills, printing and publishing plants, foundry and machine shops, confectioneries, ice and ice cream plants, bakeries, cottonseed oil mills, furniture factories and numerous other lines of manufacturing establishments.

But what has been accomplished in the way of manufacturing in the past is only an index of what will take place in these lines within the next few years. There has been a marked increase in number of industries and important business establishments locating in Oklahoma City within the last few months.

Leading Retail Market

As in manufacturing and wholesaling, Oklahoma City has always led the state in retail business.

In all, Oklahoma City has more than 2,000 retail establishments, including all lines, doing an annual business exceeding $240,000,000.

Oklahoma City enjoys a retail trade from a territory in which more than 1,000,000 people reside. The splendid railroad facilities from all sections of the territory, including steam lines and interurbans; the splendid roads being constructed every year in all directions from the city, with excellent bus service from sections where steam lines are less adequate, give Oklahoma City the advantage of a retail trade including a growing mail order business envied by cities much larger than Oklahoma City.

Center of Finance

In financial affairs, the state looks to Oklahoma City as its leader. It is the home of the Federal Reserve Bank and the principal reserve city of the state's banking system, making it the central point of financial transactions of the state. More than once the Federal Reserve branch here has taken the leadership for the United States in the amount of business done in proportion to its members. A report issued from Washington at one time showed that during one month not long ago the number of items handled by the Oklahoma City branch was greater than those handled in either of the parent banks at Atlanta and San Francisco, as well as larger than those handled in branches at Buffalo, Baltimore, Birmingham, Denver, Detroit, El Paso, Houston, Jacksonville, Nashville, New Orleans, Little Rock, Louisville, Omaha, Portland, Memphis, Salt Lake City, Seattle, Helena, and Spokane.

The six national banks located here had clearings during the year 1926 of $1,526,000,000. This does not include two state banks located here. The clearings for the previous year were $1,443,000,000, showing a gain of $83,000,000 for the past year over the previous 12 months.

During the past three or four years, the city's financial leaders have developed methods of accommodation to oil operators as well as the general commercial and agricultural and live stock interests. The reserve capacity of the banks of Oklahoma City is adequate to take care of any legitimate enterprises desiring to come to Oklahoma City, and they invite negotiations to this end.

But Oklahoma City takes the lead in all other financial organizations of the

FRANK BUTTRAM, President ERRETT R. NEWBY, Secretary

BUTTRAM PETROLEUM CORPORATION

Producers of Crude Petroleum

GENERAL OFFICES

BRANIFF BUILDING OKLAHOMA CITY, OKLA.

NITERDAY
Tail Light

THIS tail-light for trailers has been approved by the Petroleum Motor Transportation Company of Tulsa, for trucks and trailers. Also, two important trailer companies are adopting this light as standard equipment.

THERE are no wires to install; no bulbs to replace; it is easily attached; it is efficient in every way. Just what your truck and trailer equipment needs. Write today.

UNIVERSAL TRAFFIC CONTROL CO.
Oklahoma City, Okla.

Confidence
in
Co-operation

Oil Men must have real confidence in their bankers in order that active co-operation between them will be complete.

Hence, we wish to increase our usefulness to deserving new accounts and suggest that we talk it over together.

Fidelity National
Grand and Robinson Bank Oklahoma City

State as well as the banking field. The automobile finance organizations, insurance companies, farm loan companies, and other types of financing institutions doing business over the State, maintain their state headquarters here.

Postoffice Statistics Show Growth

No better barometer of the industrial life of a community can be found than that which is afforded by its postoffice statistics. Nor can any more dependable history of the growth of the city be found than that shown in the figures of its postal business.

This city is the state headquarters for the money order business for Oklahoma, the headquarters for inspectors and other subordinate officials of the department working in Oklahoma. In fact, there are but five postoffices in the United States —New York, Chicago, Philadelphia, Boston and St. Louis—that are in a higher class. This office is organized on the plan and the postmaster receives the same salary as in Detroit, Cleveland, Baltimore, Kansas City, New Orleans, San Francisco and Los Angeles. Postal receipts at five-year intervals since 1889 follows:

1890	$ 5,480.00
1895	13,626.00
1900	44,935.00
1905	110,054.00
1910	355,392.00
1915	490,897.00
1920	1,063,347.00
1925	1,443,328.00

Receipts for 1926 were $1,576,082. Thirty-one tons of first class mail are handled by this office daily and a daily average of 290,000 letters. No other city in the State handles one-half this amount of business.

Additional Industries Needed

Anyone who has read any substantial part of the preceding pages must have been convinced of the extraordinary extent of the resources in raw materials which are found in the territory immediately adjacent to Oklahoma City. No equal area in the world can produce a greater abundance or greater variety of raw materials from which to manufacture the supplies of the home and workshop.

The need of Oklahoma for factories to work up this raw material to supply the large and already-growing population is very great, and coincident with these needs are several factors which make the manufacturing of these lines in Oklahoma City especially favorable.

Oklahoma City is not attempting to operate on an irrational basis in the way of funishing cash donations or factory sites to induce new institutions to locate here. The Oklahoma City Chamber of Commerce does, however, have contracts and means available which enable it to co-operate very effectively with new enterprises in the way of supplying factory sites at the lowest possible prices. These sites are located on trackage in or near the city and many of them permit of the development of desirable industrial residence sections near the factories. Many of these sites have power, water and other city conveniences already available.

Reference has heretofore been made to the other essentials for successful locating and operating new enterprises, such as transportation facilities, the raw materials and the broad market ready to be served.

Oklahoma City as a Home City

No community anywhere can claim finer surroundings among which to rear a family than Oklahoma City. This community has an intelligent, enlightened, likable people gathered from every section of America. It has more individually owned and beautifully kept homes than the average city. It has an educational-system of a most modern type in equipment, organization and instruction, leading from kindergarten through the University. It has a church life of nation-wide reputation for depth and energy. Its places of amusement, parks and play grounds are of the highest order. It has an intellectual and social atmosphere that will compare favorably with that of any community anywhere.

Considered from any angle, one who comes from the most highly developed community is enabled to step into a community life here that will be a delight to him and his family.

Home Completed Every Two Hours

Oklahoma City presents the appearance, more than any other city in America, of having been built all at once and only "a few minutes ago."

Homes here are, as a rule, not pretentious, but they are substantial, up-to-the-minute in design, and elicit most enthusiastic expressions of admiration from visitors to the city. There are, of course, many real mansions and whole districts that may well be so denominated; but the city's outstanding character as a home city is given by the thousands of residences of moderate cost, clearly occupied by their owners, and uniformly attractive.

A simple calculation based on official records of several years shows that Oklahoma City completes a new home every two hours of each work-day in the year.

Comparison with records elsewhere also show that Oklahoma City has several of the largest and most substantial home-financing institutions of the country, and under their plan of operation, any man who is a safe moral risk can own a home for his wife and children here.

School System Unsurpassed

Oklahoma City's public school system includes 47 modern school buildings, of which three are senior high schools, three junior high schools and one vocational school. Public school property represents an investment of over $8 000.000, a teaching force of more than 700 is required to take care of the 30.000 boys and girls in attendance. No teacher is employed who does not hold a degree from a recognized "grade A" college or university.

The University of Oklahoma, which is rated among the first 10 state universities of the nation is located at Norman, just 18 miles from Main Street in Oklahoma City, connected with a hard-surfaced road and an hourly interurban and steam line service from Oklahoma City.

Central State Teachers College, one of the best of such colleges in the state is located at Edmond, 15 miles north of Oklahoma City, also connected with the city by an hourly interurban and steam line service and one of the most attractive hard-surfaced roads leading out from the city.

Within the limits of Oklahoma City is the Oklahoma City University, the third largest university in point of enrollment of strictly college students in the state. This insittution is growing rapidly. The value of its buildings, grounds and endowment fund reaches $1,600.000. A campaign is now underway to raise an additional $2,000,000 for new buildings and endowment purposes, Oklahoma City's part of which ($500,000) has already been subscribed with a good margin.

The Oklahoma University School of Medicine and the University Hospital are located in Oklahoma City. The last legislature appropriated funds for a new medical school building and crippled children's hospital to be added to the group of buildings already constructed. Plans for this school which are now going forward will make Oklahoma City one of the leading medical centers of the nation.

In addition to these there are also a number of private and parochial schools of the very best class. New citizens moving into Oklahoma City are always delighted with the fine educational advantages provided for their young people.

Comparison is Challenged

Where in all the nation is there to be found a city in which the activities and interests of an entire state are centered to such an extent as in Oklahoma City? Where is there another city so firmly linked with the commonwealth of which it is the capital that progress in the commonwealth cannot but enhance the position and prosperity of that city?

There can be no question but that the great State of Oklahoma with its vast resources, as yet scarcely touched, is going to go forward and with it will progress its metropolis. Oklahoma City's future is assured.

MEN WHO KNOW—

The successful figures of the oil industry are successful mainly because they KNOW FINANCE.

They know the value of money.

By the same gauge, oil men KNOW SECURITIES; recognize the worth of good securities.

Many shares of Southwestern Light & Power Company's preferred stock are already owned by figures in the oil industry noted for business acumen.

The individual investor can follow no better example than that set by these successful men whose financial status bespeaks their business judgment.

Full information concerning Southwestern Preferred Shares will be freely furnished to all interested in selection of a security that is AS SAFE AS THE FUTURE OF OKLAHOMA.

Southwestern Light & Power Company

EARL R. ERNSBERGER
President and General Manager

517 Braniff Building, Oklahoma City, Okla.

COURTESY AND SERVICE

Petroleum—

Has Always Found This Bank *FRIENDLY!*

THE Security National Bank now, as in the past, welcomes worthwhile connections among the oil fraternity. Our facilities are ample for handling all phases of the oil business, and on our Directorate are men qualified through experience to understand the problems confronting every branch of the industry.

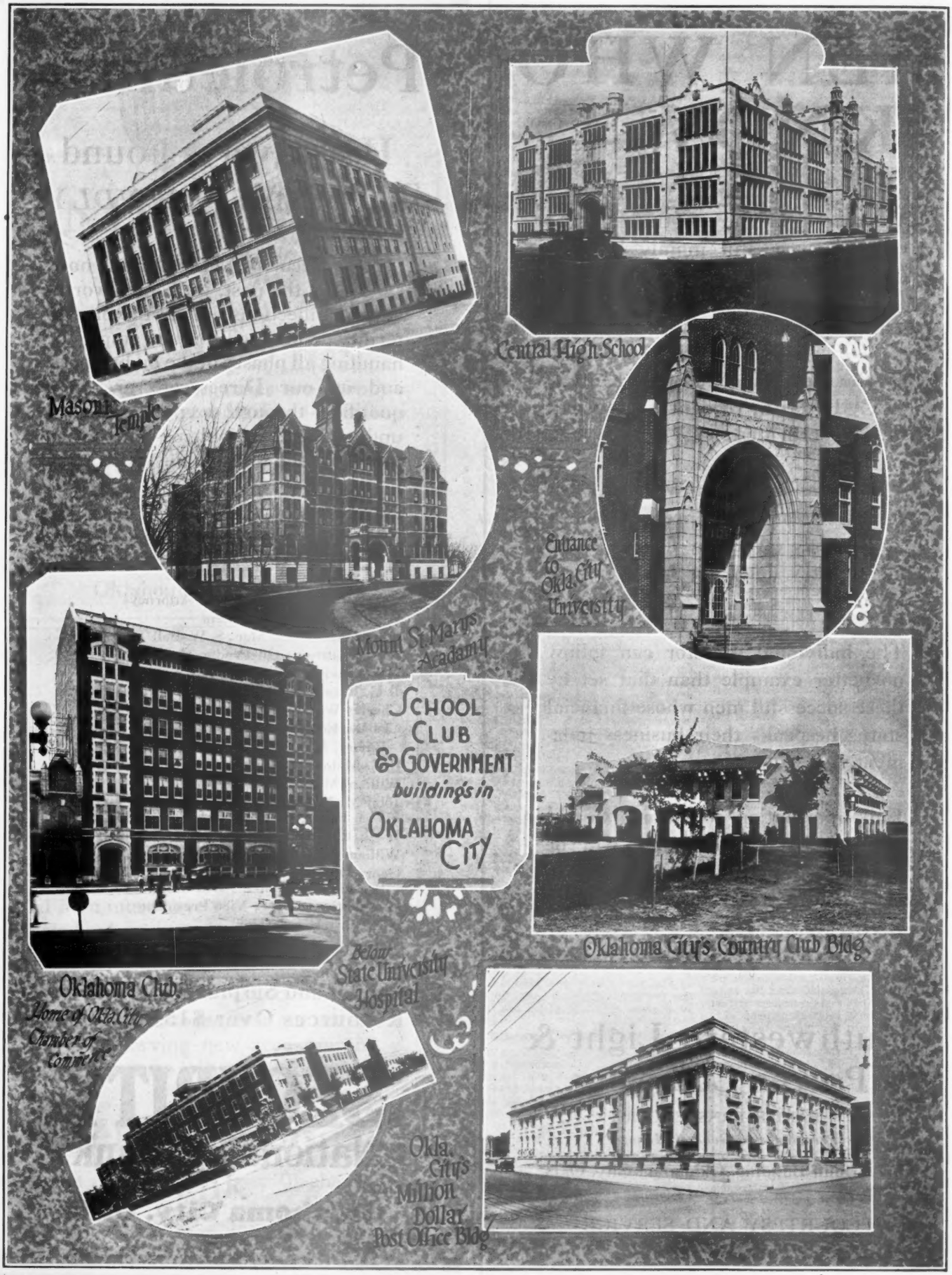
Directors

Judge C. B. Ames;
Ames, Lowe & Cochrane, Attorneys
F. G. Babb; Vice President
R. J. Benzel; Gen. Mgr., S. W. Bell Telephone Co.
Frank Buttram; Oil Producer
E. D. Davis; A. A. Davis & Co.
J. C. Eagan; Vice President & Trust Officer
Charles W. Gunter; Vice President
Charles Edward Johnson;
Embry, Johnson & Tolbert, Attorneys
E. S. Malone; President, Alexander Drug Co.
William Mee; President
John M. Noble;
Vice President, S. W. Bell Telephone Co.
W. R. Ramsey; Oil Producer
William Raymond; Vice President
George L. Rose;
President Equitable Farm Mortgage Co.
G. S. Weitzenhoffer; Vice President
E. E. Grimes; Cashier
Wm. Mee, Jr.; Assistant Cashier

Capital and Surplus $1,000,000.00
Resources Over $15,000,000.00

SECURITY National Bank

Oklahoma City, Okla.


Masonic Temple
Central High School
Mount St. Mary's Academy
Entrance to Okla. City University
SCHOOL CLUB & GOVERNMENT buildings in OKLAHOMA CITY
Oklahoma Club. Home of Okla. City Chamber of Commerce
Below State University Hospital
Oklahoma City's Country Club Bldg.
Okla. City's Million Dollar Post Office Bldg.

HOMAOKLA OIL COMPANY

Producers

of

Crude Petroleum

General Offices

OKLAHOMA CITY, OKLAHOMA

This Bank Welcomes Worth While Oil Accounts

Capital, Surplus and Profits $750,000.00

Resources over $10,000,000.00

DIRECTORS.—

THOMAS E. BRANIFF
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President, Provident Mortgage Co.

M. B. BLAKE, Vice-President
President, Security National Bank, Lawton, Okla.

JAMES B. BARNES
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CHARLES F. COLCORD
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JEAN H. EVEREST
Attorney

W. H. GARSIDE
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VERNON V. HARRIS
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J. W. S. HUTCHINGS
Manager, Oklahoma Nat'l Stock Yards Company

P. A. JANEWAY, President

E. E. McINNIS,
General Solicitor, Santa Fe System

V. E. McINNIS
Attorney

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President, Oklahoma Industrial Finance Co.

BEN MILLS, Executive
Vice-President

J. K. D. SHAFFER
Oil Producer

CHAS. H. TAYLOR
Capitalist

CARL WILLIAMS
Editor Oklahoma Farmer-Stockman

Liberty National Bank

Oklahoma City, Okla.

The CLASSEN Co. Realtors

WE do a general realty business, specializing in business and trackage property.

TWENTY-FIVE years real estate service in Oklahoma City. Paid up capital stock $300,000.00.

WE are rental agents for the centrally located Terminal Office Building.

Terminal Office Building
Oklahoma City

GOLDELLINE OIL CORPORATION

PETROLEUM RECLAMATION COMPANY

Producers

of

PETROLEUM

J. B. UMPLEBY, *President*

Braniff Bldg. Oklahoma City, Okla.

Agriculture and Live Stock scenes of Western Oklahoma
Curing Alfalfa Hay
Oklahoma Peaches
A Typical Oklahoma Poultry Farm Yard
Sheep Knee deep in bluegrass
Prize Winners of Okla. County
An Okla. Stock Farm
Cotton One of the Major Crops
Loading Watermelons

Bureau of Mines Statistics for Month of March 1927

HIGH POINTS IN MARCH REPORT

Crude Oil

Crude production, which was the greatest in the history of the industry, exceeded consumption by 4,480,000 bbls., that amount of crude being added to storage. The Seminole Field of Oklahoma was responsible for the large increase.

All of the increase in crude storage was in pipe line and tank farm stocks east of California. Crude oil stocks at refineries decreased slightly and stocks of California crude, including fuel oil, were unchanged.

Daily crude oil imports and exports were practically the same as during January and February.

Refined Products

A gasoline production of 902,000 bbls. daily represented a small increase over February and almost equalled the record production of January. The gasoline recovery from crude was 40.5 per cent.

Exports of gasoline decreased from February, but a 11-per cent increase in domestic demand resulted in a total demand of 25,683,000 bbls. for the month. The total demand (domestic consumption plus exports) the first three months of this year was 10.8 per cent greater than the total demand for the same period last year. The increase in exports for these comparative periods was only .6 of 1 per cent, with a 11.2-per cent increase in domestic demand.

Due to the increase in consumption the increase in gasoline stocks during March was only 2,696,000 bbls. This compares with a 7,035,000-bbl. increase in January and 3,656,000 bbls. in February. The increase in gasoline stocks during March of last year was 1,989,000 bbls. Stocks on March 31 were 12 per cent greater than on the same date last year.

Kerosene production during March was 712,000 bbls. less than in March, 1926. The total demand (domestic consumption plus exports) was 661,000 bbls. less than in March, 1926. Stocks of kerosene during March were practically unchanged from the February figure.

Gas oil and fuel oil daily production during March showed little change from the January and February averages. Stocks decreased 155,000 bbls. during the month.

The domestic demand for lubricants showed approximately an 80 per cent increase over February. This took care of an increase in production and also reduced stocks from the February 28 figure 336,000 bbls.

Wax production increased without a corresponding increase in demand so that stocks were again increased. Stocks now total 201,340,000 pounds, the greatest in several years. Coke and asphalt production showed substantial gains in production with further increases in stocks.

By G. R. Hopkins

ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke, and asphalt in barrels of 42 U. S. gallons.)

	January, 1927	February, 1927	March, 1927	March, 1926
SUPPLY:				
Domestic crude production:				
Light	*61,324,000	*58,850,000	65,435,000	49,795,000
Heavy	*10,151,000	*9,024,000	9,869,000	10,876,000
Total	71,475,000	67,874,000	75,304,000	60,671,000
Daily average	2,306,000	2,424,000	2,429,000	1,957,000
Excess of daily average domestic production over domestic demand	425,000	483,000	423,000	83,000
Imports:				
Crude	4,514,000	4,181,000	4,434,000	7,216,900
Refined	1,269,000	1,508,000	1,175,000	1,523,000
Total supply all oils	77,258,000	73,563,000	80,913,000	69,410,000
Daily average	2,492,000	2,627,000	2,610,000	2,239,000
Change in stocks all oils	7,691,000	8,355,000	8,071,000	2,069,000
DEMAND:				
Total demand	69,567,000	65,208,000	72,842,000	67,341,000
Daily average	2,244,000	2,329,000	2,350,000	2,172,000
†Exports:				
Crude	1,204,000	1,165,000	1,199,000	966,000
Refined	10,062,000	9,686,000	9,450,000	8,276,000
Domestic demand	58,301,000	54,357,000	62,193,000	58,099,000
Daily average	1,881,000	1,941,000	2,006,000	1,874,000
Excess of daily average domestic demand over domestic production	(See above)	(See above)	(See above)	(See above)
STOCKS (end of month):				
Crude:				
‡East of California:				
Light	*230,872,000	*237,968,000	244,569,000	227,927,000
Heavy	*48,100,000	*47,490,000	45,325,000	59,850,000
Total	278,972,000	285,458,000	289,894,000	287,777,000
California:				
Light	31,017,000	29,770,000	29,568,000	43,973,000
§Heavy	87,971,000	87,640,000	87,886,000	88,466,000
Total crude	397,960,000	402,868,000	407,348,000	420,216,000
Total refined	129,184,000	132,631,000	136,222,000	124,427,000
Grand total liquid stocks	527,144,000	535,499,000	543,570,000	544,643,000
Bunker oil (included above in domestic demand)	3,940,000	3,579,000	3,874,000	3,402,000

*Revised. †Includes shipments to noncontiguous territories. ‡Exclusive of producers' stocks. §Includes fuel oil.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES, WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons.)

	February, 1927		March, 1927		Jan.-Mar., 1927	Jan.-Mar., 1926
FIELD:	Total	Daily Av.	Total	Daily Av.		
Appalachian	2,327,000	83,100	2,659,000	85,800	7,305,000	6,677,000
Lima-Indiana	156,000	5,600	170,000	5,500	466,000	494,000
Michigan	29,000	1,000	38,000	1,200	96,000	6,000
Illinois-S. W. Indiana	615,000	22,000	751,000	24,200	2,008,000	2,123,000
Mid-Continent	40,227,000	1,436,700	44,854,000	1,446,900	125,589,000	93,219,000
Gulf Coast	4,152,000	148,300	4,374,000	141,100	13,232,000	7,989,000
Rocky Mountain	2,385,000	85,200	2,622,000	84,600	7,593,000	9,341,000
California	17,983,000	642,200	19,836,000	639,900	58,004,000	55,060,000
Total U. S.	67,874,000	2,424,100	75,304,000	2,429,200	214,653,000	174,909,000
STATE:						
Arkansas	3,549,000	126,800	3,834,000	123,700	11,462,000	15,502,000
California	17,983,000	642,200	19,836,000	639,900	58,004,000	55,060,000
Colorado	221,000	7,900	243,000	7,800	697,000	557,000
Illinois	557,000	19,900	696,000	22,400	1,840,000	1,966,000
Indiana	70,000	2,500	67,000	2,200	201,000	189,000
Southwestern	58,000	2,100	55,000	1,800	168,000	157,000
Northeastern	12,000	400	12,000	400	32,000	32,000
Kansas	3,363,000	120,100	3,590,000	115,800	10,551,000	9,384,000
Kentucky	502,000	17,900	549,000	17,700	1,560,000	1,516,500
Louisiana	1,733,000	61,900	1,873,000	60,400	5,498,000	5,035,000
Gulf Coast	276,000	9,900	279,000	9,000	850,000	949,000
Rest of state	1,457,000	52,000	1,594,000	51,400	4,648,000	4,086,000
Michigan	29,000	1,000	38,000	1,200	96,000	6,000
Montana	407,000	14,600	445,000	14,400	1,265,000	1,600,000
New Mexico	135,000	4,800	141,000	4,600	408,000	271,000
New York	169,000	6,000	194,000	6,300	523,000	448,000
Ohio	593,000	21,200	685,000	22,100	1,857,000	1,757,000
Central and eastern	449,000	16,000	527,000	17,000	1,424,000	1,295,000
Northwestern	144,000	5,200	158,000	5,100	433,000	462,000
Oklahoma	19,828,000	708,100	22,558,000	727,700	60,883,000	41,030,000
Osage County	2,031,000	72,500	1,976,000	63,800	6,236,000	5,980,000
Rest of state	17,797,000	635,600	20,582,000	663,900	54,647,000	35,050,000
Pennsylvania	735,000	26,300	842,000	27,200	2,298,000	2,014,000
Tennessee	4,000	200	3,000	100	12,000	10,500
Texas	15,906,000	568,100	17,373,000	560,400	50,787,000	30,257,000
Gulf Coast	3,876,000	138,400	4,095,000	132,100	12,442,000	7,040,000
Rest of state	12,030,000	429,700	13,278,000	428,300	38,345,000	23,217,000
West Virginia	468,000	16,700	544,000	17,500	1,478,000	1,393,000
Wyoming	1,622,000	57,900	1,793,000	57,800	5,223,000	6,813,000
Salt Creek	1,163,000	41,500	1,252,000	40,400	3,689,000	5,009,000
Rest of state	459,000	16,400	541,000	17,400	1,534,000	1,804,000
CLASSIFICATION BY GRAVITY (approx.)*						
Light crude	58,850,000	2,101,800	65,435,000	2,110,800	185,609,000	143,367,000
Heavy crude	9,024,000	322,300	9,869,000	318,400	29,044,000	31,542,000

*Revised.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (BARRELS)

(From Bureau of Foreign and Domestic Commerce)

	February, 1927		March, 1927		Jan.-Mar., 1927	Jan.-Mar., 1926
	Total	Daily Av.	Total	Daily Av.		
Imports	4,181,000	149,300	4,434,000	143,000	13,129,000	15,647,000
From Mexico	1,771,000	63,200	1,651,000	53,300	5,462,000	11,741,000
From Venezuela	1,752,000	62,600	1,477,000	47,600	4,549,000	2,613,000
From Colombia	585,000	20,900	856,000	27,600	2,280,000	.....
From other countries	73,000	2,600	450,000	14,500	838,000	1,293,000
Exports	1,165,000	41,600	1,199,000	38,700	3,568,000	3,198,000
Domestic crude oil:						
To Canada	884,000	31,600	1,043,000	33,700	2,895,000	2,660,000
To other countries	281,000	10,000	156,000	5,000	673,000	537,000
Foreign crude oil	.....	.....	.....	.....	.....	1,000

Note: No shipments to territories during March.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (BARRELS)

Domestic petroleum by fields of origin.	February, 1927		March, 1927		Jan.-Mar., 1927	Jan.-Mar., 1926
	Total	Daily Av.	Total	Daily Av.		
Appalachian	2,243,000	80,100	2,603,000	84,000	7,521,000	6,715,000
Lima-Indiana	157,000	5,600	141,000	4,500	437,000	583,000
Michigan	29,000	1,000	38,000	1,200	96,000	6,000
Illinois- S. W. Indiana	694,000	24,800	749,000	24,200	1,968,000	1,237,000
Mid-Continent	35,266,000	1,259,500	39,874,000	1,286,200	112,343,000	101,443,000
Gulf Coast	4,605,000	164,500	4,181,000	134,900	15,427,000	9,991,000
Rocky Mountain	2,623,000	93,700	3,023,000	97,500	8,800,000	8,473,000
Deliveries and exports	45,617,000	1,629,200	50,609,000	1,632,500	146,592,000	128,448,000
Deliveries	44,938,000	1,604,900	49,943,000	1,611,100	144,389,000	126,044,000
Foreign petroleum	4,134,000	147,700	4,580,000	147,700	13,326,000	15,639,000
Deliveries of domestic and foreign petroleum	49,072,000	1,752,600	54,523,000	1,758,800	157,715,000	141,683,000

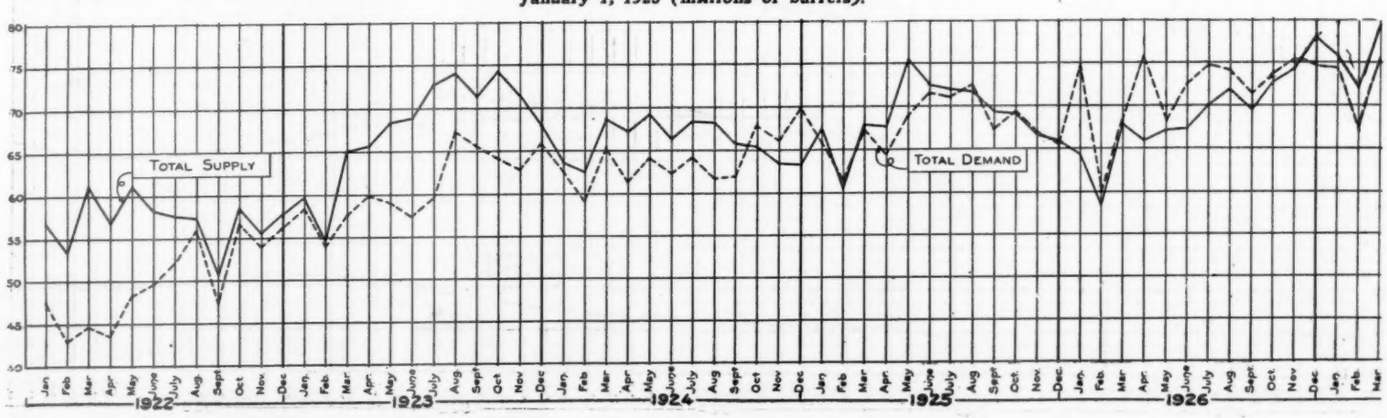
NUMBER OF PRODUCING OIL WELLS COMPLETED*

February, 1927	1,342
March, 1927	1,417
January-March, 1927	4,144
January-March, 1926	3,598

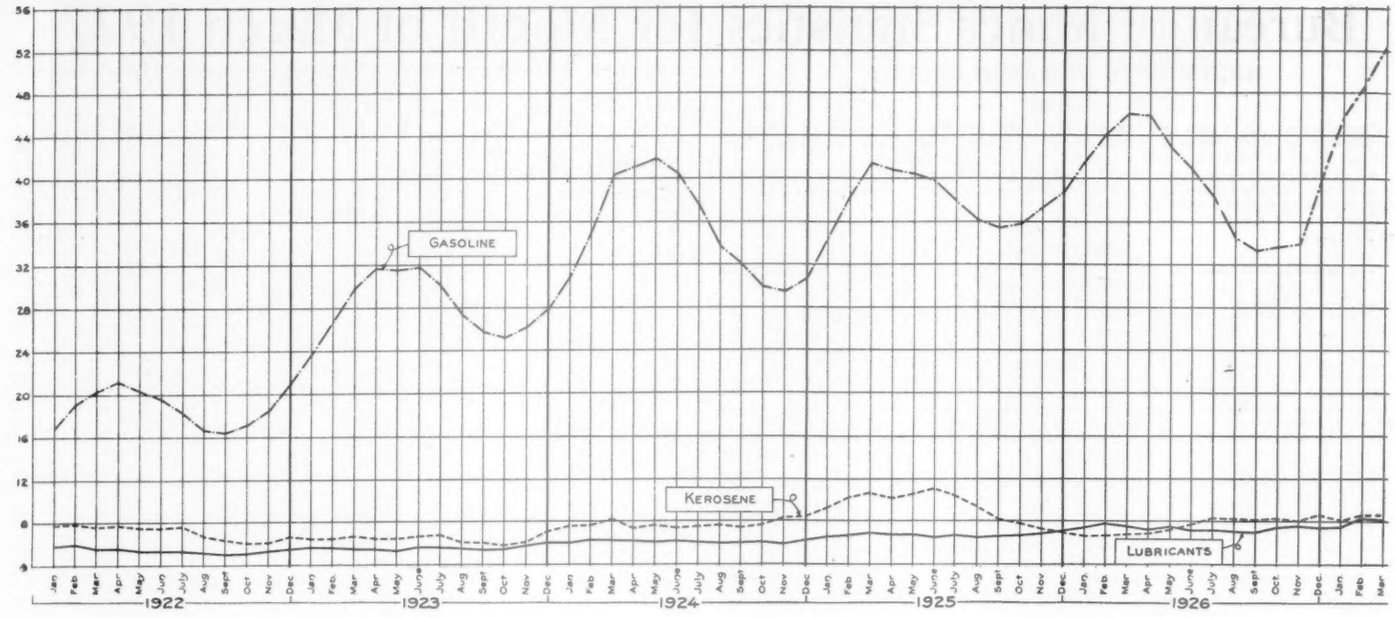
*For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

(Continued on Page 108)

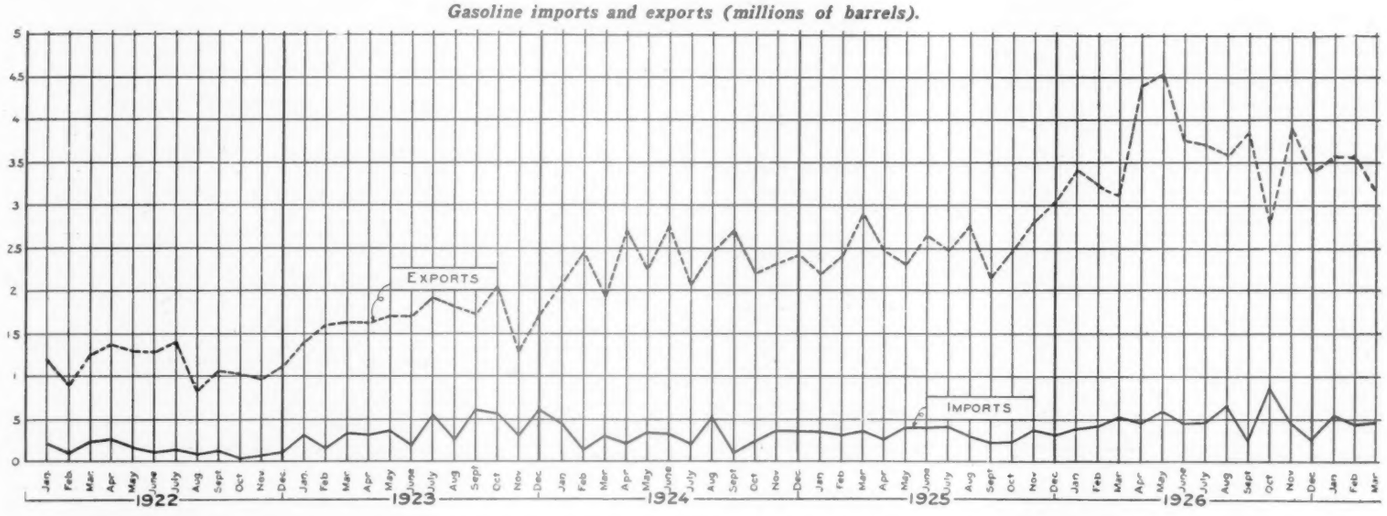
Crude oil supply (production plus imports) and demand (domestic consumption plus exports). Data on demand include California fuel oil starting January 1, 1925 (millions of barrels).



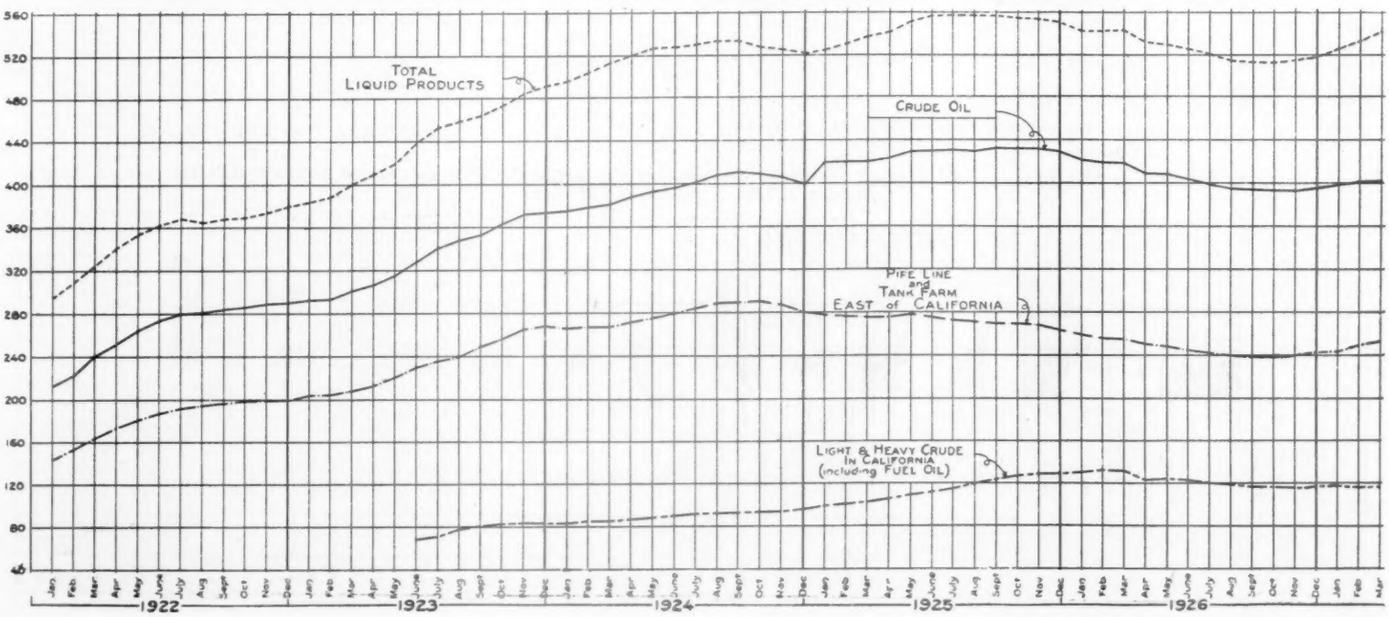
Gasoline, kerosene and lubricating oil stocks (millions of barrels).



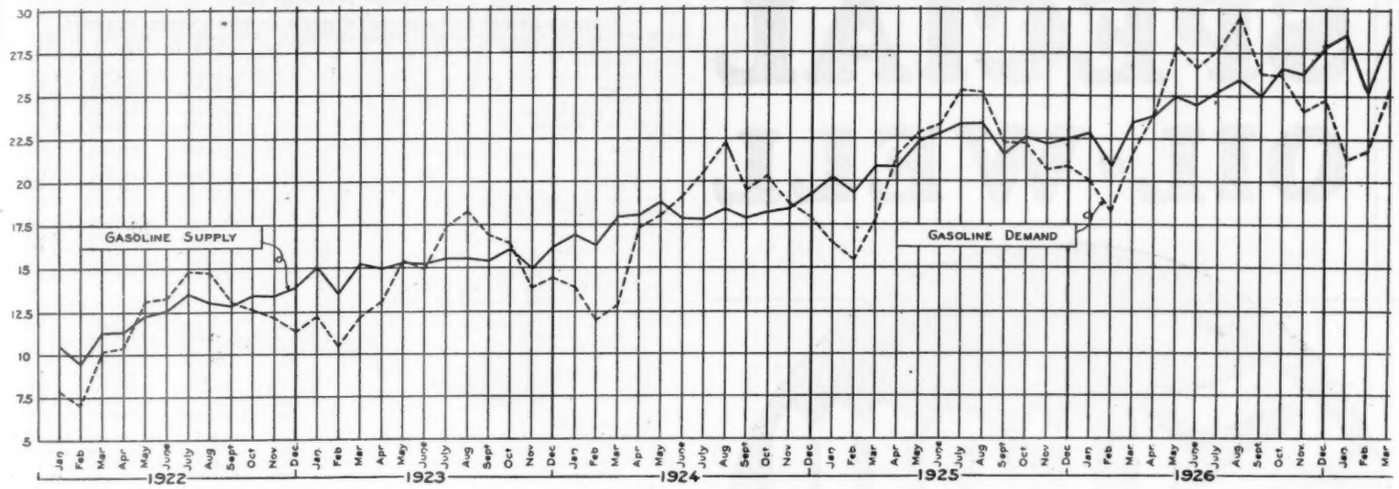
Gasoline imports and exports (millions of barrels).



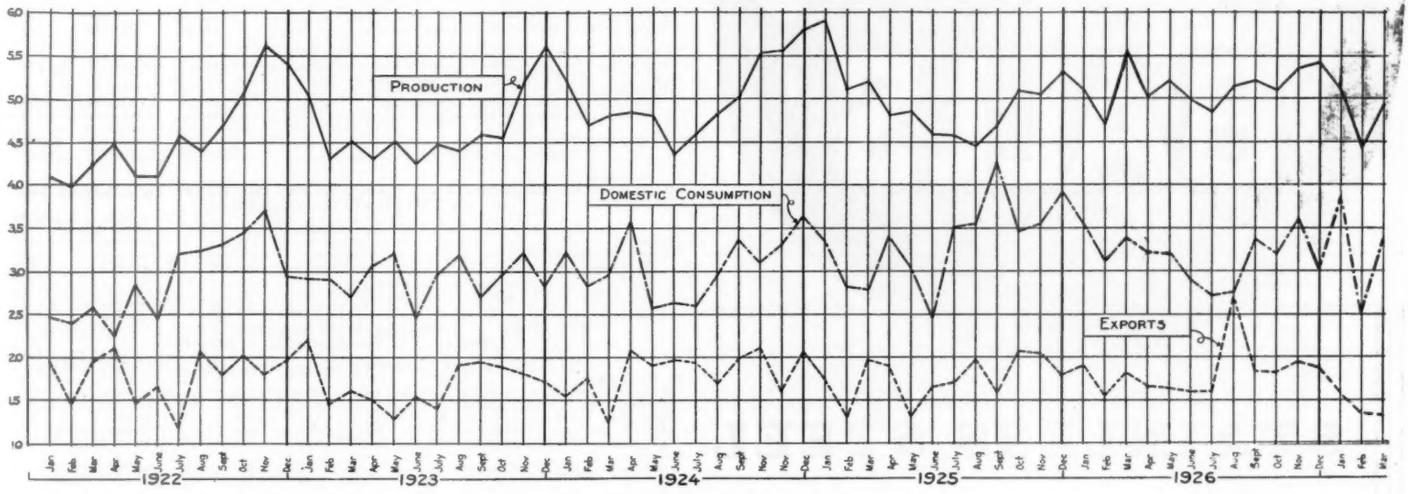
Crude oil stocks. Total liquid stocks consists of all crude and refined stocks reduced to barrels (millions of barrels).



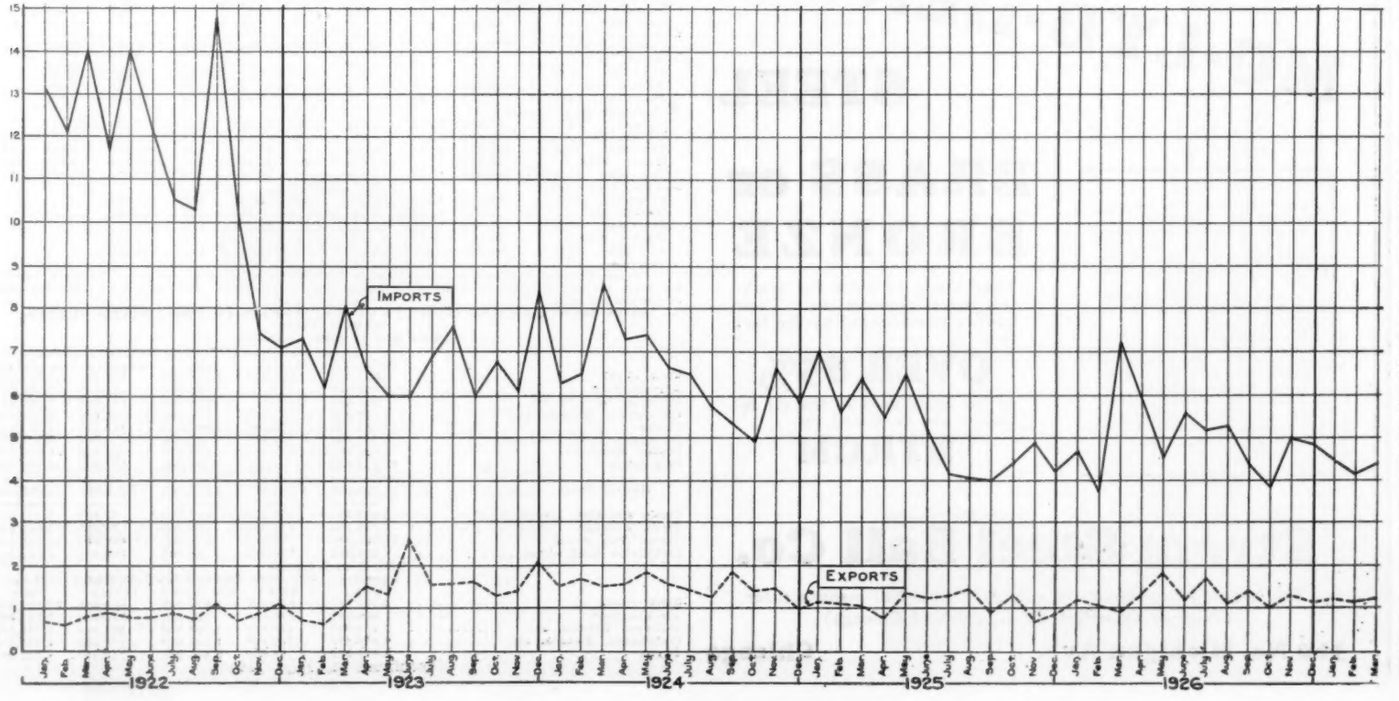
Gasoline Supply (production plus imports) and demand (domestic demand plus exports) (millions of barrels).



Kerosene production, domestic consumption and exports (millions of barrels).



Crude oil imports and exports (millions of barrels).



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BUREAU OF MINES STATISTICS FOR MARCH, 1927

(Continued from Page 103)

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES

AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:		February 28, 1927	Mar 31, 1927	Mar 31, 1926
East Coast:				
Domestic		7,585,000	7,230,000	6,602,000
Foreign		2,604,000	2,206,000	3,113,000
Appalachian		1,606,000	1,627,000	1,616,000
Indiana, Illinois, etc.		2,491,000	2,561,000	1,571,000
Oklahoma, Kansas, etc.		3,551,000	3,841,000	3,558,000
Texas:				
Inland		1,120,000	1,197,000	740,000
Gulf Coast:				
Domestic		8,305,000	8,481,000	5,975,000
Foreign		237,000	257,000	266,000
Arkansas and Inland Louisiana		560,000	441,000	690,000
Louisiana Gulf Coast:				
Domestic		7,179,000	7,317,000	4,217,000
Foreign		967,000	889,000	1,871,000
Rocky Mountain		1,504,000	1,385,000	1,498,000
Total east of California		37,709,000	37,432,000	31,717,000
ELSEWHERE THAN AT REFINERIES:				
Domestic—Reported by field of origin:				
Appalachian:				
N. Y., Pa., W. Va., Eastern and Central Ohio:	Gross	6,675,000	6,707,000	6,952,000
	Net	6,391,000	6,424,000	6,653,000
Kentucky:	Gross	1,253,000	1,276,000	1,908,000
	Net	1,128,000	1,151,000	1,802,000
Lima-Indiana:	Gross	877,000	907,000	1,084,000
	Net	666,000	695,000	882,000
Illinois-S. W. Indiana:	Gross	12,293,000	12,295,000	11,947,000
	Net	11,808,000	11,810,000	11,468,000
Mid-Continent:				
Oklahoma; Kansas; Central, North. and West Texas:	Gross	165,575,000	170,523,000	157,081,000
	Net	153,248,000	158,834,000	144,638,000
Northern Louisiana and Arkansas:	Gross	31,509,000	31,278,000	45,303,000
	Net	29,011,000	28,405,000	43,079,000
Gulf Coast:	Gross	18,057,000	18,248,000	17,635,000
	Net	17,703,000	17,896,000	17,261,000
Rocky Mountain:	Gross	27,334,000	26,886,000	29,909,000
	Net	27,236,000	26,835,000	29,863,000
Total pipe line and tank farm stocks east of California:	Gross	263,573,000	268,120,000	271,819,000
	Net	247,191,000	252,050,000	255,646,000
Foreign crude petroleum on Atlantic Coast		108,000	71,000	102,000
Foreign crude petroleum on Gulf Coast		450,000	341,000	312,000
Total refinery, pipe line and tank farm stocks of domestic and foreign crude petroleum east of California		285,458,000	289,894,000	287,777,000
CLASSIFICATION BY GRAVITY (approx.):				
East of California:				
Light crude (24 degrees and above)		*237,968,000	244,569,000	227,927,000
Heavy crude (below 24 degrees)		47,490,000	45,325,000	59,850,000
California: Light		29,770,000	29,568,000	43,973,000
Heavy (including fuel)		87,640,000	87,886,000	88,466,000

*Revised.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (BARRELS)

	Feb., 1927	Mar., 1927	Jan.-Mar. 1927	Jan.-Mar. 1926
Crude oil	831,000	572,000	1,792,000	3,436,000
Refined products	2,497,000	1,816,000	6,634,000	4,345,000
Gasoline	1,101,000	606,000	2,456,000	1,980,000
Tops	.....	.....	.....	162,000
Gas oil	229,000	380,000	1,108,000	872,000
Fuel oil	1,167,000	758,000	2,997,000	1,193,000
Lubricants	.....	72,000	73,000	138,000

COMPARATIVE ANALYSIS
(Thousands of barrels of 42 U. S. gallons)

	Runs, output—Total	Dy. av.	Imports*—Total	Dy. av.	Exports*—Total	Dy. av.	Stocks end of period	Dom. dem.—Total	Dy. av.
Crude to stills:									
February, 1927	63,351	2,263	4,181	149	1,165	42	†285,458	.....	....
March, 1927	69,082	2,228	4,434	143	1,199	39	†289,894	.....	....
Jan.-Mar., 1927	202,381	2,249	13,129	146	3,568	40	†289,894	.....	....
March, 1926	63,000	2,032	7,216	233	966	31	†287,777	.....	....
Jan.-Mar., 1926	180,927	2,010	15,647	173	3,198	36	†287,777	.....	....
Gasoline:									
February, 1927	25,024	894	416	15	3,544	127	49,714	18,240	651
March, 1927	27,886	900	493	16	3,219	104	52,410	22,464	725
Jan.-Mar., 1927	80,870	899	1,429	16	10,320	115	52,410	58,592	651
March, 1926	23,868	770	517	17	3,094	100	46,121	19,302	623
Jan.-Mar., 1926	68,335	759	1,309	15	9,700	108	131,777	52,698	586
Kerosene:									
February, 1927	4,453	159	1	....	1,399	50	8,655	2,590	93
March, 1927	4,802	155	3	....	1,351	44	8,753	3,356	108
Jan.-Mar., 1927	14,368	160	4	....	4,366	49	8,753	9,828	109
March, 1926	5,516	178	1	....	1,876	61	7,004	3,492	113
Jan.-Mar., 1926	15,384	171	2	....	5,324	59	20,710	10,179	113
Lubricants:									
February, 1927	2,345	84	.....	....	620	22	8,361	1,231	44
March, 1927	2,754	89	149	5	895	29	8,035	2,334	75
Jan.-Mar., 1927	7,669	85	230	3	2,379	26	8,035	5,061	56
March, 1926	2,646	85	4	....	740	24	7,640	2,180	70
Jan.-Mar., 1926	7,742	86	7	....	2,256	25	23,094	5,106	57
Wax (thousands of pounds):									
February, 1927	47,363	1,692	2,048	73	23,623	844	198,452	20,171	720
March, 1927	53,644	1,731	910	29	28,205	910	201,340	23,461	757
Jan.-Mar., 1927	155,121	1,724	3,418	38	81,056	901	201,340	61,474	683
March, 1926	55,714	1,797	456	15	25,005	807	130,341	24,788	800
Jan.-Mar., 1926	159,036	1,767	1,756	20	82,775	920	377,078	64,067	712
Gas and fuel oils:									
February, 1927	30,185	1,078	1,053	38	3,812	136	†22,099	.....	....
March, 1927	32,377	1,044	525	17	3,657	118	†22,561	.....	....
Jan.-Mar., 1927	95,498	1,061	2,238	25	11,201	124	†22,561	.....	....
March, 1926	29,824	962	947	31	2,345	76	†20,037	.....	....
Jan.-Mar., 1926	85,899	954	3,395	38	9,147	102	†64,748	.....	....

*From Bureau of Foreign and Domestic Commerce, subject to revision. Exports, except for wax, include shipments to Alaska, Hawaii and Porto Rico. †These stocks total for east of California only.

RUNS TO STILLS AND OUTPUTS OF REFINERIES IN THE UNITED STATES, MARCH, 1927

Oils Run to Stills (barrels)

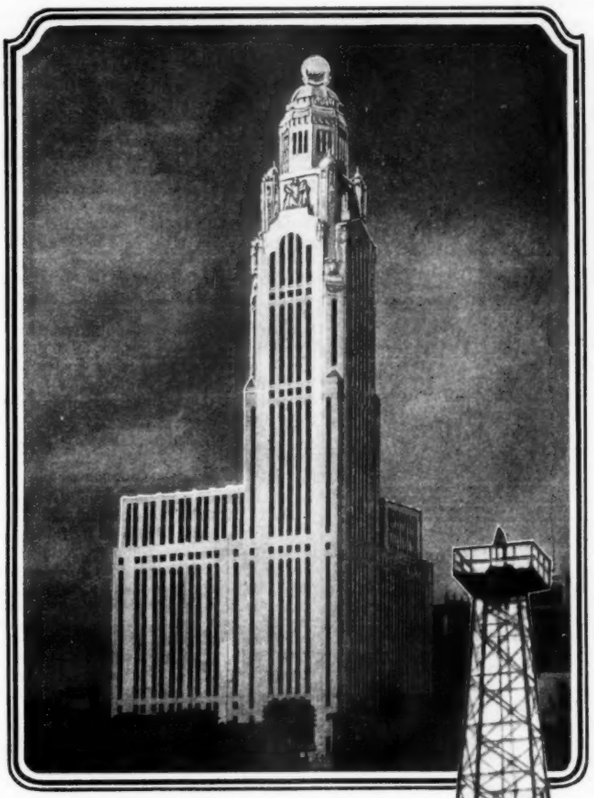
	Crude oil—Domestic	Crude oil—Foreign	Unfinished oils	Natural-gas gasoline	Total oils run to stills
East coast	9,223,000	2,968,000	1,140,000	290,000	13,621,000
Appalachian	2,406,000	.....	95,000	75,000	2,576,000
Indiana, Illinois, etc.	5,905,000	.....	448,000	131,000	6,484,000
Oklahoma, Kansas, etc.	8,062,000	.....	370,000	358,000	8,790,000
Texas	13,905,000	85,000	402,000	482,000	14,874,000
Louisiana and Arkansas	5,782,000	734,000	45,000	411,000	6,972,000
Rocky Mountain	2,441,000	.....	673,000	88,000	3,202,000
California	17,571,000	.....	*444,000	518,000	18,533,000
United States total	65,295,000	3,787,000	3,617,000	2,353,000	75,052,000
Daily average, March, 1927	2,106,300	122,100	116,700	75,900	2,421,000
Daily average, February, 1927	2,150,100	112,500	122,900	77,100	2,462,500
Texas Gulf coast	10,825,000	85,000	374,000	408,000	11,692,000
Louisiana Gulf coast	4,014,000	734,000	43,000	338,000	5,129,000

Output and Losses

	Gasoline (bbls.)	Kerosene (bbls.)	Gas and fuel oils (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East coast	4,536,000	906,000	5,897,000	955,000	22,951,000
Appalachian	1,054,000	340,000	553,000	364,000	7,593,000
Indiana, Illinois, etc.	3,490,000	402,000	1,697,000	351,000	5,799,000
Oklahoma, Kansas, etc.	4,470,000	747,000	2,547,000	177,000	4,067,000
Texas	5,999,000	1,195,000	5,853,000	713,000	5,362,000

(Continued on Page 118)

Engineering Profession is Wrong



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Seminole
Wewoka
Denver
Casper
Torrance
Los Angeles
Taft

Los Angeles and San Francisco, Cal.

SOUTHWEST TEXAS

(Continued from Page 42)

amount of gas. If the well is brought in it will result in an extension to the field as well as a new sand depth, being a trifle deeper than the usual depth. Houston Oil Co.'s No. 10 Fannie Heard at 2,020 feet tested an average gas well for the field, and casing is being set and the well brought in. Houston Oil Co. has made location for No. 2-A Rooke, 500 to 600 feet south of production.

Kingsville Field—Kleberg

Houston Oil Co. and A. C Erwin's No. 1 Kivlin, Lot 7, Section 50, located 660 feet to SE cor., has resumed drilling at 710 feet. Carter-Walsh's No. 1 Flato, Lot 29, is having trouble setitng casing at 1,887 feet. Humble Oil & Refining Co.'s No. 3 Kleberg-Trustee, Lot 1, Section, 40 located 150 feet to NW cor., is drilling at 3 365 feet with sand cored at 3,338 feet; No. 1 Kleberg trustee, Lot 8, Section 40, located 150 feet to NE cor., is drilling at 3,150 feet; No. 3 King, east of Cayo del Grullo is on oil sand at 2,325 feet and setting 6⅝-inch casing to test; No. 3-A Dennett, NW cor. Lot 2, Section 39, is setting 6⅝-inch casing to test 24 feet of oil sand at 2,442 feet; No. 1 Kivlin, NW cor. Lot 5, Section 39, at 2,560 feet had 14 feet of sand, drilled to 2,570 feet and will set casing and test.

Adams Gas Field—Medina

Western Gas & Fuel Co. and C E. Lange's No. 5 Adams, Survey 72, located 1,600 feet north of No. 4, set casing at 1,004 feet. Western Gas & Fuel Co.'s No. 11 Adams, Durst Survey, is a location 1,550 feet northwest of No. 10. Western Gas & Fuel Co. and Medina Syndicate's No. 1 Nixon, Survey 13, located 922 feet to east line and 281 feet to north line, has been spudded in.

Gas Field—Nueces County

W. L. Pearson's No. 1 Weil, west of Corpus Christi, is swabbing to bring in a gasser; location has been made and derrick is up on the Weil farms for No. 2 Weil.

White Point Area—San Patricio

W. L. Pearson and others' No. 6 Cage, Rachel Survey, 1,500 feet south of No 5, is on gas sand at 2,360 feet.

Luling Field—Caldwell

Magnolia Petroleum Co.'s No. 5 Branyon, James Berry Survey, located 400 feet northeast of No. 1, is drilling at 1,990 feet. North & South's No. 1 Kelly is drilling at 6,863 feet in Schist; No. 1 Tiller is also drilling in Schist at 6,146 feet.

CALIFORNIA FIELDS

(Continued from Page 50)

secured and it will be cored and watched very closely. Drilling on several additional wells is being held in abeyance pending the outcome. The California Eastern Oil Co., which is running 11 strings of tools, should get its first production within two weeks, but the majority of its wells are scheduled for completion around the close of May.

E. J. Miley brought in his No. 1 Alamitos a few days ago flowing about 4,000 bbls. a day from 4,678 feet but it has been beaned down to 3,200 bbls. In addition to the oil, this new well is making approximately 10,000,000 feet of wet gas daily which should yield around 35,000 gallons of casinghead gasoline. Miley's second well in this section is down 4,715 feet and scheduled for completion in the near future. The California Petroleum, which established quite a reputation for fast work, finished its first three producers in the town lot area and incidentally added 5,600 bbls of new production. The company's successful completions were all on the Alamitos lease. No. 1 was good for 1,500 bbls. daily from 4,673 feet, while No. 3 came in flowing 2,150 bbls. from 4,660 feet. No. 4 is doing 1,950 bbls. daily from 4,693 feet. All were finished with 8⅝-inch water strings and are flowing barefooted in keeping with the usual policy in this field of finishing without either a liner or oil string. The oil from all three wells is exceptionally clean and averages approximately 27.6 degrees in gravity. They are flowing through five-eighths inch beans under an average pressure of 1,000 pounds on the casing and 500 pounds on the tubing. Paul Getty finished another well on the Cleaver lease and this new producer, No. 2, is flowing 3,175 bbls. daily from 4,705 feet. The oil is exceptionally clean and tests 27.1 degrees.

The Standard's No. 10 San Gabriel in the older section, is being listed as a 1,350-bbl. well from 4,760 feet. The oil, which is clean and tests 26.2 degrees, is flowing through a three-quarter inch bean under a pressure of 800 pounds. The Associated's No. 4 Bryant, which came in early in the week from 4,668 feet, is consistently maintaining its initial production of 2,450 bbls. and in view of the favorable gas pressure, 700 pounds, is expected to hold up indefinitely. Two more wells on the Bryant lease and No. 10 on the Hellman property are scheduled for completion. George F. Getty finished two new wells in the town lot area, the first to come in being No. 2 Alamitos, which was carried down to 4,683 feet and finished in the usual manner by dispensing with the regulation oil string or liner. It registered an initial flow of 2,190 bbls., the oil being exceptionally clean and testing 27.8 degrees. No. 1 Alamitos, which followed a short time later, came in flowing 2,400 bbls. of oil and about 5,000,000 feet of gas daily from 4,654 feet.

Huntington Beach

The Standard completed two new wells in the Huntington Beach Field, both being located on the Pacific Electric property, which is in the western part of the town lot area and parallels the ocean front. The company brought in No 5 Pacific Electric flowing 625 bbls. daily and completed No. 6 on the same lease doing 475 bbls. The former was carried down to 4,323 feet while the latter was completed at 4,370 feet, both wells being finished with 6⅝-inch oil strings. The Standard has two more potential producers on the Pacific Electric lease and three additional prospective producers on Lease B. The San Martinez Oil Co. twisted off several stands of drill pipe while rotating ahead in its outpost on Ninth Street at 5,050 feet and as a result no further progress will be made pending recovery. Drilling operations in the Huntington Beach Field have been growing smaller and smaller and consequently completions in this area will be less frequent. There are still about 25 or 30 drilling projects to be finished, the depths ranging from spud to 4,000 feet.

No. 6 of the Miley-Mills organization in the Long Beach Field staged a short but spectacular blowout from the 3,100-foot level but it was successfully put under control and will be passed for production after being cleaned out. The Shell is making exceptionally good progress with its five drilling projects on the Cresson lease and No. 7 will probably be tanking oil within 30 days. The California Eastern has suspended all work in this field and the four or five crews affected have been transferred over to Seal Beach for duty. Two or three new wells should be finished at Long Beach during the next couple of weeks, but in view of the large amount of drilling being done at Seal Beach future completions in this district will be more or less infrequent.

Dominguez

The Union successfully finished No. 15 Hellman in the Dominguez Field and, while it is only doing 250 bbls. daily the oil is exceptionally clean and the production stable. The output could be substantially boosted if desired by deeper drilling but due to prevailing conditions it will stand as is. This company has three new wells nearing completion on the Callender lease, one of which, No. 17, should be completed shortly. The Brea Canyon Oil Co. finished two new wells in the Brea Olinda, or Fullerton Field, and both resulted in commercial production. No. 40, drilled to 4,821 feet and finished with a 6¼-inch oil string, is doing 390 bbls. daily, while No. 41, completed at 4,557 feet, is flowing 510 bbls. daily. The Fullerton, Birch and Union Oil Companies should each finish a new producer in this field within two or three weeks. Drilling operations at Montebello are going along at a slow rate, although No. 3 Mulholland of the St. Helens Petroleum may bear watching in the course of the next 30 days. This is scheduled to be a deep test and it is the present intention to carry the hole down to at least 5,000 feet. The company is running three strings of tools in this field.

Richfield

The Associated's No. 5 Kammerer, a new completion in the Richfield district, has just been brought in flowing 570 bbls. of clean 25.2 gravity oil daily from 4,405 feet. Several new wells are scheduled for completion at Richfield within a month and daily production may register an appreciable increase unless curtailment measures are undertaken. The General Petroleum should complete Nos. 6 and 7 on the Hugo lease within 10 days and the company will follow these with Nos 2, 3 and 4 on the Mullin lease. The Union will likewise complete several new wells, after which it is thought drilling operations will be cut to a minimum. The Chanslor-Canfield Midway Oil Co., Continental and Standard will also appear prominently in future completion lists. Operators have been quite active in the area east of the Coyote Field and several hundred acres of potential oil land have been leased or purchased in fee. This activity resulted from the recent successful completion of Herndon & Hunter's No. 1 Lemke in the eastern part of the East Coyote Hills Field. The Shell and Standard are particularly active in the entire area lying between Coyote and Richfield. The latter recently tied up a very promising property held by the Yorba Linda Water Co.

Ventura Avenue

The Shell finished another large flowing well in the Ventura Avenue Field, No. 18 Taylor, which is holding up very steady. This well, which is in the western part of the field, is making approximately 2,000,000 feet of wet gas daily in addition to the output of oil. It was carried down to 6,332 feet and finished with a 5¾-inch oil string carrying 2,000 feet of 100-mesh screen. The Shell has several other potential producers on the Edison, Gosnell and Taylor leases but drilling is not being pushed any faster than necessary. The Petroleum Securities is coring ahead in No. 1 Willett at 5,640 feet and it possible this well will be given an early test. The second well on this lease passed the 2,000-foot level a few days ago. On the Orton lease the Petroleum Securities has No. 2 down 3,500 feet and No. 3 at 2,900 feet. A rig is going up for No 4. Neither the Associated nor General Petroleum finished a new well but each has two rapidly nearing completion. In view of the curtailment in production being made in this field all drilling operations may be indefinitely suspended. The California Petroleum brought in another new well on South Mountain in Ventura County, its second consecutive weekly completion. The company's new producer was No. 20 Harvey, a 150-bbl. pumper from 3,265 feet.

Midway-Sunset

The Standard completed two new wells in the Midway-Sunset Field during the past week, both being in Section 9-32-24. No. 7, drilled to 2,855 feet and finished with a 6⅝-inch oil string, is an 85-bbl. pumper, while No. 46, completed at 2,853 feet, is making 790 bbls. daily. The Honolulu Consolidated brought in its No. 76 in Section 8-32-24 and, while several additional rigs are standing, it is not believed any further work will be undertaken for the present. The company's new well came in flowing 475 bbls. daily from 2,878 feet, the hole being finished with a 6⅝-inch oil string. The Murvale Oil Co.'s deep test, No. 11 in Section 20-32-24, is being abandoned as a dry hole after being carried down to 5,061 feet and plugged back by stages to 2,875 feet. The Caribou's deep test, No 12, in Section 32-31-23, is down 5,910 feet and while drilling is still under way, the outlook is unsatisfactory. The Standard picked up the top of the brown shale in No. 4 Rass in the Maricopa Flats, Section 10-11-23, and a string of 9-inch has been landed at 4,842 feet.

Southern California Wildcats

There were no further important developments in the Potrero wildcat district and the Associated's test is again standing suspended following a short resumption of work last week. The company transferred its activities to a second test southeast and spud will probably be made soon. The California Eastern will probably require another three or four weeks' work before it can possibly reach the projected depth at which production is anticipated. Because of the possibilities of this district, both the Associated and California Eastern may find it possible to suspend work indefinitely, although the outlook is not any too bright on account of lease requirements. The Standard staked out a new location at Olive and, since the company has lined up considerable acreage in this section, drilling will undoubtedly be carried to a conclusion in the near future. J. E. O'Donnell has a rig going up at Julian City just off of Harbor Boulevard. The Southern California Drilling Co. ran into a difficult fishing job in No. 1 Matteson at El Segundo and it may result in an early abandonment as there have not been any appreciable showings to date. No. 1 Weston of the Petroleum Securities at Palos Verdes is making satisfactory footage and may bear watching. The Shell is also stepping right along with a new wildcat at Placentia, No. 1 Allec. The Shell's second wildcat in southern California, No. 1 Mission, in the San Fernando Valley, is also scheduled for an immediate spud. George F. Getty is already under way at Rivera, the well being down 718 feet a few days ago.

Northern California Wildcats

The development in northern California wildcat circles was the Marland's abandonment of its No. 1 Mitchell on Jacalitos Dome, near Coalinga in Fresno County, as a duster at 4,379 feet. Another important suspension included the California Petroleum's wildcat at Camarillo and, while an abandonment notice has not yet been filed, this is thought to be a mere formality. The Pacific Eastern failed to secure commercial production in its Bakersfield wildcat and drilling will probably be resumed at 4,075 feet. Three new wildcats are getting under way in Santa Barbara County, about 2 miles away from the recently discovered Goleta Field. The Barnsdall expects to start work on No. 1 Edwards immediately, while Clarence Berry is rigging up to spud in No. 1 Pometto within 10 days. The Graham & Loftus Oil Co. is hauling in material for a test and rig construction has started. In the Goleta Field proper, the Santa Barbara Oil Co. will test out a shallow showing found in No. 1 at 600 feet before going after the Miley zone. In the meantime, the company is putting up a steel rig for No. 2 and it will be electrically equipped and ready for work within two weeks. The California Eastern, whose property adjoins Miley's holdings on the east, will spud in tomorrow. The Barnes Oil Co's test in Kern County, Section 20-28-29, will be put on a production test within four or five days. This company reported a rather promising showings at 1,653 feet.

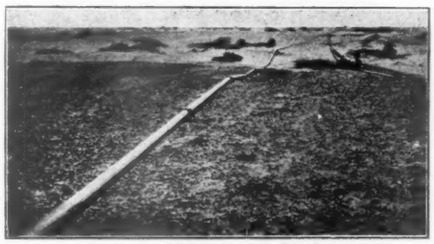
NATIONAL TRANSIT ELECTION

OIL CITY, Pa., May 7.—At the annual meeting of stockholders of the National Transit Co., the following were re-elected as president and directors for the ensuing year: President, F. D. Williams; directors: C. E. Martin, L. C. Longaker, J. H. Contino, T. L. Blair, F. G. Zimmerman and C. T. McClintock. At a directors' meeting the following officers were elected: Vice president, C. E. Martin; secretary, F. G. Zimmerman; treasurer, L. C. Longaker. The following officers were appointed: Assistant treasurer, J. H. Contino; assistant secretary, B. L. Wood.

Companies That Use Victaulic Couplings for Gas and Oil

12" line for refined oil, Sparkill, New York, Standard Oil Company of New York.

2½" gas line tapping Parson Pool, Texas, laid at the rate of 500 lengths a day by a five man gang using Victaulic Couplings, Chestnut & Smith Corp.



6" line in Peruvian oil fields coupled at the rate of a joint in two minutes.

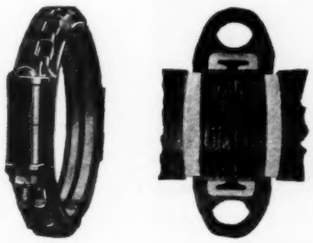
VICTAULIC Couplings have earned specification by many leading oil producing and oil refining companies because they save time, labor and money. They take the place of screw couplings, flanged and caulked joints. Their use makes special flexible and expansion joints unnecessary.

Every Victaulic Coupling makes an exceptionally strong *straight line coupling*, *flexible coupling* and *expansion joint*.

Victaulic Couplings can be installed at an average rate of a minute per joint for the smaller sizes—only slightly longer for larger diameter pipes. They set new standards for speed and economy in pipe line construction. Their permanent leaktightness practically eliminates any cost for inspection and maintenance.

They are supplied in all sizes from ¾" up for all pressures from vacuum to over two tons per square inch—for steel, wrought iron and cast iron pipe.

For detailed information write for Victaulic Bulletin No. 1



Victaulic Couplings on 8" kerosene line, Bayway Refinery Standard Oil Co. (N. J.)

Joint on 12" line completed in 2 minutes 40 seconds, including lining up of pipe, by men who had never before used Victaulic Couplings. Gulf Pipe Line Co., Panhandle, Texas.

8" pipe jointed with Victaulic Couplings and then dragged across the river. Roxana Petroleum Co.

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Ajax-Greenwood Throttle Valve

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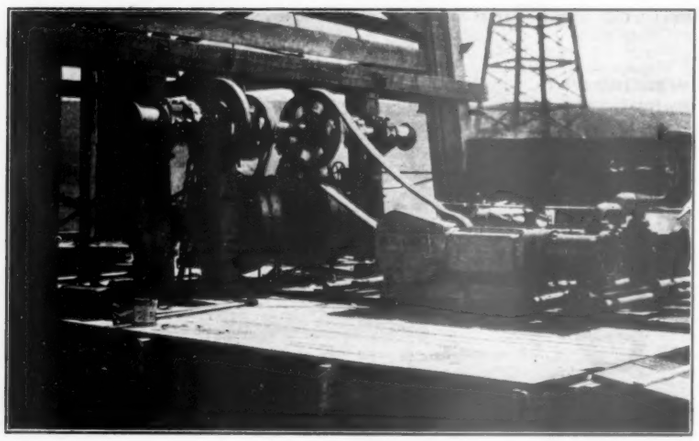
Views of Boiles No. 7 Well, Cushing, Okla. Drilled by E. W. Metz with the Ideal-Ajax 12x12 Enclosed Twin Engine for the New England Oil & Pipe Line Co.

Equip your engine with the Ajax-Greenwood Valve and remove the cause of serious accidents. This Safety Throttle Valve, automatically bleeds the steam content of the engine and prevents steam pressure from building up in the cylinders when the throttle is closed. The engine cannot turn over unexpectedly.

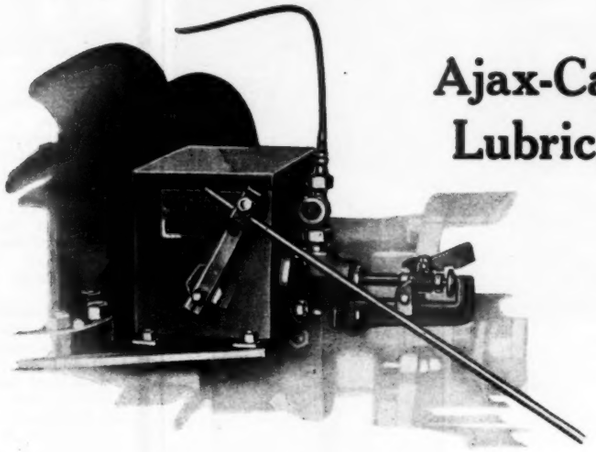
The Ajax-Greenwood Valve is built with typical Ajax precision. It can be used with all drilling engines, twin or single cylinder.



This photograph shows the engine equipped with Ajax-Greenwood Valve and Ajax-Carson Lubricator.

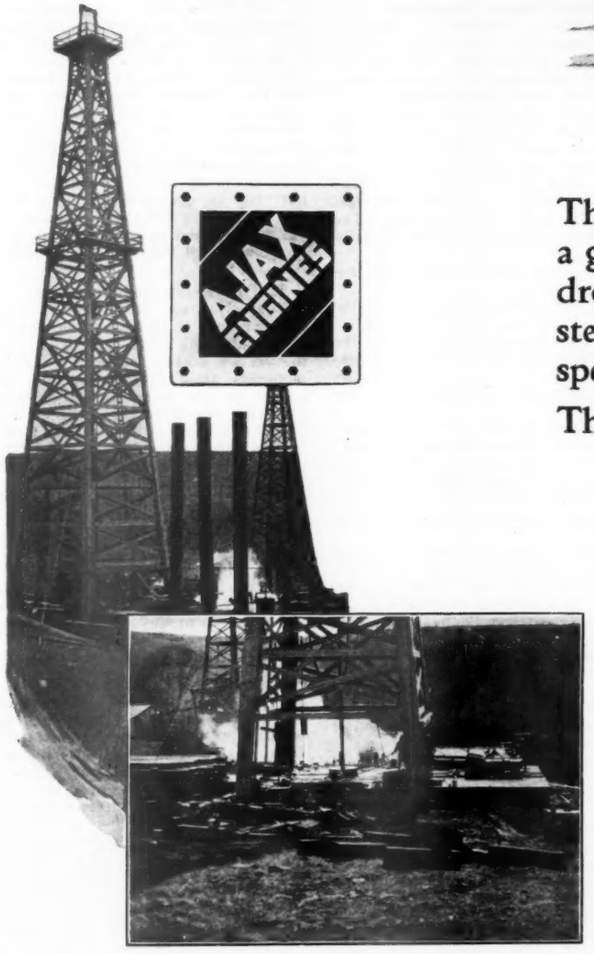
AJAX-DRILLING

AJAX Accessories



Ajax-Carson Lubricator

You See the Oil at Work



This sight feed lubricator does more than give you a glimpse of oil in the reservoir; you see drop by drop form in the sight feed on its way into the steam line slowly or quickly according to the speed of the engine.

The Ajax-Carson Lubricator automatically adjusts itself to the engine speed. It is valveless; there are no delicate adjustments to get out of order. It forces the oil into the cylinders at any boiler pressure.

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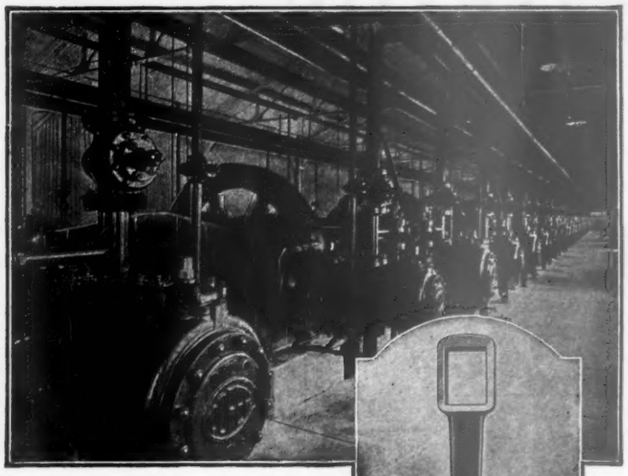
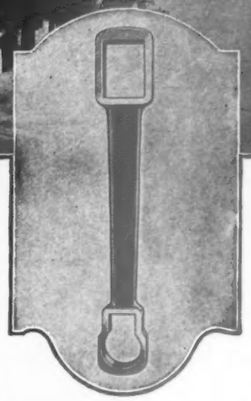
In every oil field

STEAM ENGINES



sixteen Cooper type-80 gas engines, all equipped with Champion Drop Forged connecting rods, in plant of Lone Star Gas Company.



Friends of Production

WHEN Champion Drop Forgings are the vital parts of production equipment they're real allies of the production man. Their load-bearing, strain-resisting ability keeps the production equipment operating day-in-and-day-out. Champion Drop Forgings insure steady production, low operating costs, freedom from break-downs, delays, and costly replacement charges.

Ask the maintenance and repair gangs about Champion Drop Forged Parts. They'll tell you that the only time they come in contact with them is when they use them to replace broken and worn-out parts. They have the stamina to stand the racket. That's the reason they are friends to production and friends to your profits.

THE CHAMPION MACHINE & FORGING CO.
CLEVELAND, OHIO

CHAMPION DROP FORGINGS

STATE LAWS SOLUTION, SAYS E. W. MARLAND

(Continued from Page 31)

and reduce it to possession, at the same time could prevent him from drilling into a pool of oil or gas which was only partially under his land and partially under the land of his neighbor and allowing the gas from such pool to escape into the air, thereby causing loss to one of the neighboring owners, and for that reason the Federal Oil Conservation Board recommended that the various oil producing states pass regulatory laws pronouncing as unlawful the waste of natural gas.

No more competent body of men than the Federal Oil Conservation Board has ever been got together to study the problems of the industry. It was aided by the views and suggestions from every leader in the industry. The hearings the board held on the subject were full and ample. The recommendation the board finally made was clear and definite.

Federal Board's Suggestion

The petroleum industry has failed to adopt its suggestion. The states in which oil and gas are produced, with the exception of one—the State of Colorado—have ignored its recommendation.

Apparently, chaos reigns—but not so. The law of the survival of the fittest continues to operate uninterruptedly, and the fittest are, as usual, earnest in the argument that there should be no other law. The large companies become larger. The small become larger. The day of the individual producer is passing.

The survivors of the struggle will enjoy happier times.

If there is anything humorous in the situation—it is that the only remedial suggestion so far coming from any of the large companies is the repeal or modification of the antitrust laws—the only laws which now impair their ability in the struggle.

The present problem of the industry is the apparent chaos resulting from overproduction had consequent destructively low priced oil. The problem of the Federal Oil Conservation Board, representing this country, is the waste of a natural resource.

Paradoxical as it may seem, the solution of the problem of waste, the country's problem, will automatically solve the industry's problem of recurrent periods of heavy overproduction.

If state laws were passed preventing the waste of natural gas pressure in the oil formations, the economic waste (the country's prob'em) would be solved. The individual producers would themselves produce ultimately a greater amount of oil from the same wells, but that greater amount of oil would be produced gradually, not in short periods with destructive results; gradually and sanely in such a way that the constantly growing needs of the world could absorb it and at prices that would be profitable to the industry.

Let me urge the producers of oil to study the report of the Federal oil conservation board and follow its recommendation regarding the prevention of the waste of gas and the even greater loss incident to the reduction of gas pressure in oil sands.

And let me further urge that they consider seriously the immediate necessity for the passage of state laws to prevent such waste.

Only by so doing can many hope to survive.

COLORADO GAS COMMISSION

Governor Adams of Colorado has named on the new gas conservation board, authorized at the last session of the Legislature, Fred W. Freeman, president of Texas Production Co., subsidiary of The Texas Company; S. H. Keoughan, president of Continental Oil Co., and C. H. Sherman, Rocky Mountain district manager of Union Oil Co. of California. This is the first regulation of the oil industry in Colorado. The law goes into effect July 12 and empowers the board to prevent the avoidable waste of natural gas, requires taking out permits for the drilling of oil wells and for abandoning same, payment of fees for permits and the making of rules and regulations.

CALIFORNIA MARKET SITUATION UNCERTAIN

LOS ANGELES, Calif., May 7.—To all appearances the gasoline war is ended. The price was so extremely low during the past two weeks that it couldn't possibly be maintained at such a low level economically. The California Petroleum Corp. was the first company to officially announce the price increase on Tuesday afternoon, May 3. The increase announced was 6 cents in Los Angeles and 4 cents throughout the balance of the state. This makes the price of gasoline at service stations in Los Angeles 18½ cents, including state tax, 19 cents in San Francisco and 19 cents in Seattle. The Richfield Oil Co., Shell Co. of California, General Petroleum Corp. of California, Gilmore Oil Co. and Union Oil Co. followed the increase initiated by California Petroleum Corp. before night. On Wednesday, May 4, Standard Oil. Co. of California, Pan American Petroleum Co. and Associated Oil Co., together with other smaller companies, fell in line. In the official statement given out by Mr. Van Deinse, vice president of the California Petroleum Corp., he stressed that the extremely low gasoline price had not only seriously hurt the oil companies but had had a very depressing effect on industry and business up and down the Pacific Coast in general and this situation should be rectified.

The refiners marketing so-called "bootleg" gasoline are at present delivering their product at service stations at 12½ cents, including state tax. This allows the service station operator to sell to motorists at 2 cents under the price quoted by the large marketing companies and still maintain a 4-cent differential. Gasoline at such service stations is now being advertised at 6 for $1 instead of 9 and even 10 for $1 a week ago. It has been learned from good authority that the large marketing companies which have contracts in effect allowing a 6-cent margin to independent dealers will continue to sell in accordance with these contracts. On the other hand, the other large marketing companies are reserving the right under present prices to at any time offer like contracts if they so desire.

Future Uncertain

In spite of the fact that oil men in general are feeling much happier, there is an undercurrent of uncertainty as to whether present prices can be maintained. It is obvious that with gasoline prices at their old level and crude prices considerably lower than before, the spread between the prices of the raw commodity and the finished product is too great. Many marketers feel that if crude prices remain at present low levels, and there is every reason to believe they will, gasoline prices will have to go down somewhat. On the other hand, there are those who think the present schedule is economically sound and can be maintained. They point out that the smaller refiner was without doubt seriously hurt by recent low prices and will not soon forget it. It is therefore reasonable to believe he will not soon start reducing gasoline prices to the point where his sales would seriously affect the sales of the larger companies so they will be forced to lower gasoline prices again. The price structure at present is without question on a very uncertain foundation and only future developments will show whether conditions can continue.

BUYS COLUMBIA ACREAGE

SHREVEPORT, La., May 9.—Atlantic Oil Producing Co. has announced it has taken over the 2,000-acre wildcat block of acreage in Columbia County, Arkansas, formerly held by the Falcon Drilling Co. It is in Township 17s-20w. The Atlantic will drill a 3,100-foot test.

Buffalo Drilling Unit

A saving of $1.00 per foot on drilling costs, $40.00 to $100.00 per well less moving expense, fewer repairs, less time lost in breakdowns—these are the results scores of users in the Pennsylvania, Kansas and Texas fields are getting from the Buffalo Drilling Unit.

It has all the qualities a good drilling outfit should have. A sturdy four-cylinder motor gives it lots of power, a wide range of speed, operates on gas or gasolene. Because it is all in one unit and mounted on steel wheels it is easily portable, easy to set up, requires no special setting form—it can be rigged up in one hour. Contractors will tell you the Buffalo Drilling Unit will pull any sized string of tools through a hole full of water at any depth. It will handle any size or length string of pipe. It uses approximately one-half barrel of water per day.

The Buffalo Drilling Unit is built in two sizes, covering practically all requirements. Write for prices.

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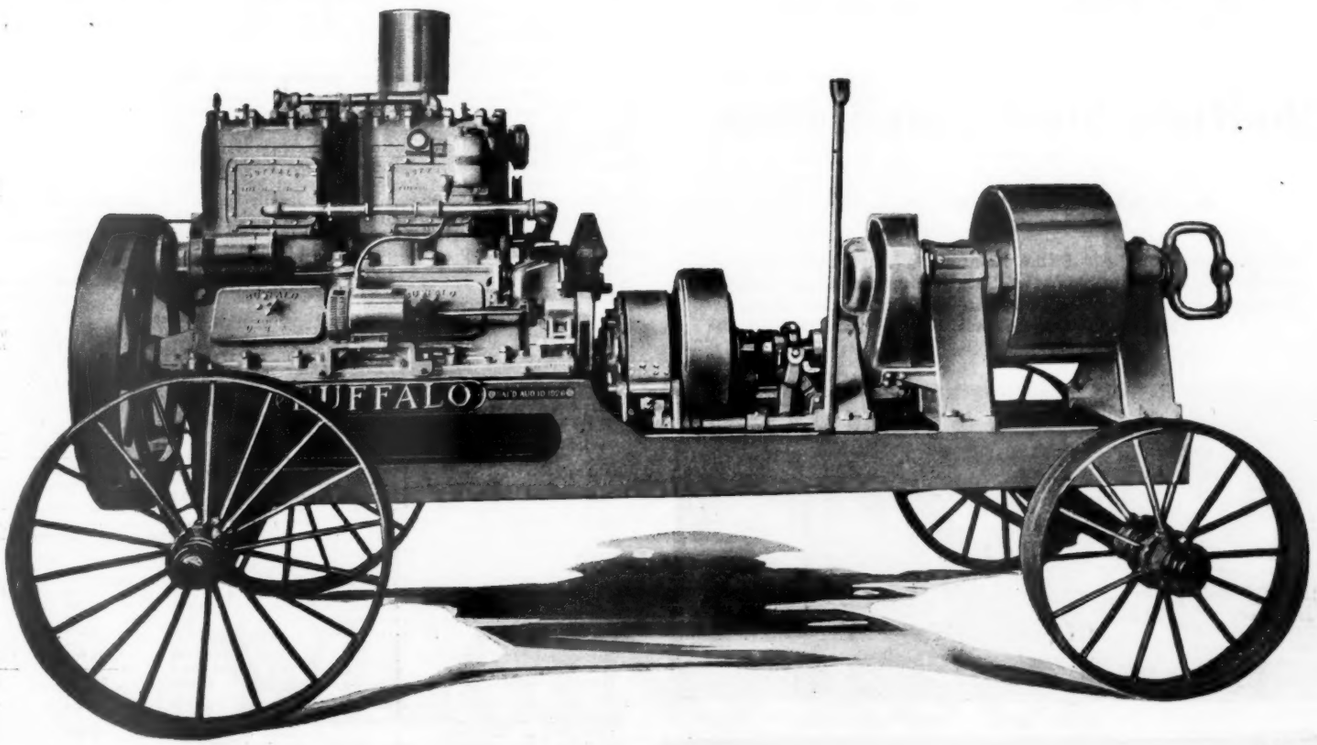

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BUREAU OF MINES STATISTICS FOR MARCH, 1927

(Continued from Page 108)

Oils Run to Stills (barrels)

	Crude oil		Unfinished	Natural-gas	Total oils
Louisiana and Arkansas	2,039,000	537,000	3,090,000	57,000	4,414,000
Rocky Mountain	1,433,000	135,000	625,000	52,000	3,458,000
California	4,865,000	540,000	12,115,000	185,000	.....
United States total	27,886,000	4,802,000	32,377,000	2,754,000	53,644,000
Daily average, March, 1927	899,500	154,900	1,044,400	88,800	1,730,500
Daily average, February, 1927	893,700	159,000	1,078,000	83,700	1,691,500
Texas Gulf coast	4,763,000	983,000	4,496,000	684,000	5,048,000
Louisiana Gulf coast	1,643,000	487,000	1,877,000	57,000	4,414,000

Output and Losses (continued)

	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Losses (bbls.)
East coast	14,942	107,545	60,000	33,000	488,000
Appalachian	1,919	.....	25,000	70,000	135,000
Indiana, Illinois, etc.	21,677	23,385	108,000	37,000	231,000
Oklahoma, Kansas, etc.	20,893	743	51,000	223,000	440,000
Texas	16,991	18,281	7,000	305,000	612,000
Louisiana and Arkansas	12,613	35,181	108,000	746,000	132,000
Rocky Mountain	9,128	966	63,000	788,000	29,000
California	.....	36,208	103,000	*210,000	313,000
United States total	98,163	222,309	525,000	2,412,000	2,369,000
Daily average, March, 1927	3,167	7,171	16,900	77,800	76,400
Daily average, February, 1927	3,146	6,167	19,500	97,500	74,700
Texas Gulf coast	14,464	18,281	1,000	79,000	508,000
Louisiana Gulf coast	11,101	33,551	98,000	647,000	65,000

*Includes 25,000 bbls. net tops rerun.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, MARCH, 1927
(Barrels)

	Straight run	%	Cracked	%	Natural-gas gasoline	%	Total
East coast	2,660,000	59	1,586,000	35	290,000	6	4,536,000
Appalachian	734,000	70	245,000	23	75,000	7	1,054,000
Indiana, Illinois, etc.	1,850,000	53	1,509,000	43	131,000	4	3,490,000
Oklahoma, Kansas, etc.	2,709,000	61	1,403,000	31	358,000	8	4,470,000
Texas	3,146,000	52	2,371,000	40	482,000	8	5,999,000
Louisiana and Arkansas	1,018,000	50	610,000	30	411,000	20	2,039,000
Rocky Mountain	737,000	52	608,000	42	88,000	6	1,433,000
California	3,634,000	75	372,000	8	*859,000	17	4,865,000
United States total	16,488,000	59	8,704,000	31	2,694,000	10	27,886,000
United States total, 2/27	14,570,000	58	7,979,000	32	2,475,000	10	25,024,000
Gulf coasts	3,030,000	47	2,630,000	41	746,000	12	6,406,000

*Includes natural-gas gasoline run through pipe lines.

STOCKS HELD BY THE REFINING COMPANIES IN THE UNITED STATES, MARCH 31, 1927

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oils (bbls.)	Lubricants (bbls.)
East coast	10,711,000	1,705,000	5,951,000	2,717,000
Appalachian	1,378,000	292,000	797,000	1,018,000
Indiana, Illinois, etc.	5,969,000	863,000	862,000	753,000
Oklahoma, Kansas, etc.	4,539,000	585,000	4,419,000	475,000
Texas	7,107,000	1,805,000	7,436,000	1,921,000
Louisiana and Arkansas	4,141,000	1,244,000	2,507,000	125,000
Rocky Mountain	5,031,000	406,000	589,000	136,000
California	13,534,000	1,853,000	.....	890,000
United States total	52,410,000	8,753,000	*22,561,000	8,035,000
United States total, 2/28/27	49,714,000	8,655,000	*22,099,000	8,361,000
Texas Gulf coast	6,249,000	1,345,000	6,266,000	1,878,000
Louisiana Gulf coast	4,010,000	1,198,000	1,905,000	125,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East coast	96,857,000	18,392	95,835	163,000	5,789,000
Appalachian	21,914,000	415	7	93,000	1,130,000
Indiana, Illinois, etc.	24,200,000	23,330	40,595	459,000	3,468,000
Oklahoma, Kansas, etc.	7,046,000	47,416	1,358	277,000	2,781,000
Texas	15,599,000	94,007	9,946	8,000	9,574,000
Louisiana and Arkansas	26,730,000	61,825	30,993	48,000	3,067,000
Rocky Mountain	8,879,000	79,535	7,112	17,000	2,155,000
California	115,000	.....	48,465	286,000	†11,428,000
United States total	201,340,000	325,521	235,251	1,356,000	39,392,000
United States totals, 2/28/27	198,452,000	294,682	234,450	1,282,000	38,986,000
Texas Gulf coast	15,483,000	86,768	9,946	5,000	8,992,000
Louisiana Gulf coast	26,730,000	59,993	29,329	42,000	2,702,000

*East of California. †Includes 3,597,000 bbls. tops in storage.

Natural-Gas Gasoline, March, 1927

For the first time since last summer, the natural-gas gasoline industry failed in March, 1927, to establish record figures for daily average production. The total output at the plants in March, 1927, was 133,800,000 gallons, or a daily average of 4,320,000 gallons. While the latter is a decrease from the preceding month of 80,000 gallons, it represents an increase over March, 1926, of 670,000 gallons or 18 per cent. The most notable gains in the production of natural-gas gasoline in March, 1927, occurred in Texas and California. The unusually low prices that prevailed in March resulted in some manufacturers storing that portion of their output not covered by contracts. Storage of natural-gas gasoline therefore increased 3,276,000 gallons and amounted to 29,262,000 gallons on March 31, 1927.

(Thousands of gallons)

	Natural-gas gasoline					Blended motor fuel, March, 1927		
	Production (net)			Stocks end month		Natural gas gasoline used	Naphtha or other oils used	Stocks end of month
District—	Feb., 1927	Mar., 1927	Mar., 1926	Feb., 1927	Mar., 1927			
Appalachian	2,900	2,600	10,200	3,027	3,435	335	323	304
Ind., Ill., etc.	1,500	1,500	1,800	429	360	90	26	16
Okla., Kans., etc.	41,700	42,000	41,900	12,674	13,970	1,495	3,287	860
Texas	23,900	28,400	19,100	6,157	7,974	248	507	97
La. and Ark.	6,400	7,000	6,200	1,649	1,740	205	297	67
Rocky Mountain	3,500	4,000	3,400	473	497	92	138	102
Total east of Calif.	86,900	92,500	82,600	24,409	27,976	2,465	4,578	1,446
California	36,300	41,300	30,500	1,577	1,286	Not available		2
Total United States	123,200	133,800	113,100	25,986	29,262	.....	.....	1,448
Daily average	4,400	4,320	3,650	.....	.....	.....	.....	.....

The indicated output of motor fuel from the above and other sources may be expressed by the following table:

(Thousands of gallons)

	Feb., 1927	Mar., 1927	Mar., 1926
Total gasoline produced at refineries * †	1,051,000	1,171,200	1,002,500
Raw gasoline blended at plants east of California	2,300	2,500	2,300
Raw gasoline sold direct to jobbers (estimated)	800	800	800
Benzol production ‡	8,400	9,500	7,500
Total motor fuel produced	1,062,500	1,184,000	1,013,100
Daily average	37,950	38,190	32,680
*Includes natural-gas gasoline blended at refineries	90,700	93,800	94,300
†Includes natural-gas gasoline run through refinery pipe lines in California	13,200	14,200	10,800

‡Estimate with production of by-product coke as a basis.

Guard your oil from evaporation and fire

IF your tanks or pipe lines were being robbed of one barrel of oil out of every ten you handled you would take some drastic steps to stop the loss. Even one barrel in 100 or one in 1000 would call for some real protective measures.

But many producers and refiners are being robbed of their oil at rates which authorities estimate all the way from 0.1% to 10%. The thief is evaporation. Fences and police are powerless to stop this robber but a Wiggins Roof will do it. It floats on the oil and effectively seals the air out.

Evaporation cannot take place unless air comes in contact with the oil. The ring of oil between the edge of the floating roof and the side of the tank is sealed airtight except for the tall narrow slot between the shoe and the tank shell. Even there the evaporation is negligible for the windage is eliminated and the oil is blanketed by a vapor heavier than air.

You can practically eliminate evaporation with a Wiggins Roof and at the same time you safeguard your oil against fire. We will be glad to give you estimates of cost and savings for your particular conditions.

CHICAGO BRIDGE & IRON WORKS

CHICAGO—2128 Old Colony Bldg.
NEW YORK—3147 Hudson Terminal Bldg.
CLEVELAND—2204 Union Trust Bldg.
DALLAS—1641 National Bank Bldg.
ATLANTA—1054 Healey Bldg.
SAN FRANCISCO—1054 Rialto Bldg.
HAVANA, Cuba—Apartado 2507

WIGGINS ROOF

OGJ 4-28 Gray

Use of Air and Gas in Oil Recovery

Facts Being Learned From Experience in the Bradford Region. Conclusions Reached From Experiments

By Frank M. Brewster*
Petroleum Reclamation Co., Bradford, Pa.

The economic life of oil fields varies but all eventually reach a point when they are no longer profitable to operate by the ordinary methods of production, except when practiced under the strictest measures of economy. But this does not mean that the oil is exhausted. There remains in the sand at least four times as much oil as has been produced.

This country has produced about 9,500,000,000 bbls. of oil and there remains in the reservoir rocks from 38,000,000,000 to 85,000,000,000 bbls. of oil in known fields that awaits newer and more efficient methods of extraction. Present methods of extraction are very inefficient. It has been left to nature to supply the propelling force, natural gas. But nature stored a limited amount of gas per barrel of oil and the gas dissolved and associated in seven or more barrels of oil is necessary to produce one, thus leaving seven or more barrels of oil in the sand that is dependent on gravity or other outside forces to propel it to the hole. Even this dissolved and associated gas is not utilized to the best advantage as it is estimated that the ratio of gas to oil produced is more than 4,000 cubic feet per barrel of oil. This same oil could have been produced under proper engineering practice, with about 400 cubic feet of gas per barrel of oil or about a tenth of the energy actually used.

Propulsive Agents

Gas is the most active agent in the expulsion of oil. The sand immediately surrounding a well will get the benefit of maximum pressure and needs it least while oil at a distance will have to move under a reduced pressure during the latter period of extraction. There is also the probability of the gas associated with the distant oil escaping through the depleted parts of the sands in the vicinity of the well without doing useful work. Hence the areas near the well are more completely drained than those at a distance.

It is evident that a propulsive agent must be introduced into the sand to move this relatively dead oil to the hole. The most feasible method of restoring these forces appears to be the forcing of gases into the oil sands. Air, natural gas, or a combination of both, are the only gases that are available in large quantities and at small cost. Other gases, such as flue gas, carbon dioxide and manufactured gas, might be used but as yet they are too costly.

The use of gases does not remove all the oil and no practice should be employed that will waste or preclude the recovery of the oil remaining in the sand after these newer methods have served their purpose. Unless further investigation and research disprove the practice it appears that the pumping of air, natural gas or a combination of both will accomplish the desired result of increasing the recovery and still leave the sands in such a condition that they can be further exploited by newer discoveries and better methods.

Dissolved Gases

Natural gas under pressure will dissolve in oil, increasing the gravity and volume and decreasing the viscosity of the oil. Movement of the thinner oil can be effected with less energy and greater quantities of oil can be recovered. But this is offset to a certain extent by a tendency for the gas not in solution to break through the thinner oil and bypass it without doing useful work. Also a gas in solution no longer has any propelling force and must be replaced with other gas to propel the oil to the hole. Dow and Calkin[1] found that natural gas was about four times as soluble in crude oil as air. Hence in using natural gas it will require about four times as much of gas as it will of air, to get the same propulsive force. The gas in soluition will break into a gas under reduced pressure but this reduced pressure is not encountered until the oil and gas have moved to within a very short distance of the producing hole and the expanding gas does very little work in bringing oil to the hole.

Effects of Air on Oil and Sand

Air, being only slightly soluble, in crude oil is exerting its propulsive force throughout its travel through the sand. However, air oxidizes most oils to a greater or less extent and increases their viscosity and lowers their gravity, although the gravity has been increased in several Oklahoma installations. This may have a very detrimental effect in paraffining or gumming the pores of the sand. However, the carbon dioxide generated may offset this effect as carbon dioxide is very soluble in crude oil and lowers its viscosity and increases its gravity.

Use of Gas Mixtures in Recovery

A combination of air and gas would probably make a better medium for propelling oil than either one used separately. The gas dissolved in the oil would reduce its viscosity, offset the oxidizing effect of the air and make the oil easier to move while the air would remain in a gaseous state and propel the oil to the hole.

Using a mixture of natural gas and other gases, such as flue gases, coal gas, etc., is desirable to eliminate explosions and to reduce the viscosity of the oil. Flue gases consist mostly of carbon dioxide and nitrogen, which makes a very good combination. The carbon dioxide would dissolve in the oil very readily, reducing its viscosity and making the oil easier to move by the nitrogen which has very little if any effect on the oil, except as a propulsive agent.

However, there are two objections to the use of flue gas. First, acid is found in the flue gas and must be removed by proper scrubbing, to prevent the rapid corrosion of transmission lines. Second, the return gas from the producing wells may soon become so diluted with noncombustible gases that it cannot be used for fuel.

Coal gas would probably be as satisfactory as natural gas as a propulsive agent and would not be as objectionable as a noncombustible gas. However, it would require scrubbing to remove all tars and gummy substances that might plug the pores of sand.

Disposal of Gasoline Produced

Either gases or air are capable of carrying gasoline vapors. The carrying power of all gases is the same.[2] Hence air is just as good as natural gas for carrying gasoline vapors. The dry gas or air as it moves through the sand keeps picking up more and more gasoline vapors and becomes richer in its gasoline content. Most of this gasoline is knocked down during compression and cooling of the gas. It is a valuable by-product and may be sold as casinghead gasoline or put to many uses such as mixing with heavy crude to raise its gravity, a fuel in internal combustion engines, a solvent for dissolving paraffin off the walls of the hole in both intake and producing wells or lubricating it down intake wells and recycling through the sand. The latter appears to be the most logical method for its disposal. The high gravity gasoline should cut paraffin deposits, lower the viscosity of the oil and act as a leaching agent for cleaning the sand of all oil.

If an air-gas mixture is recycled through the sand it will produce gasoline in the same manner as natural gas and in like quantities for all gases have the same carry power for gasoline vapors. However, it must be remembered that air-gas mixtures are explosive within certain limits while certain limits have been found for explosive mixtures[3] of air-gas under low pressure, it has not been demonstrated that these limits will hold the same or even in direct ratio under high pressures. Even if definite limits were known and established for air-gas mixtures under high pressures it would not be safe to assume that the gas was constantly of uniform mixture. Diffusion of gases takes place very slowly in the sand and also in the pipe lines, resulting in mixtures of varying quantities of air and gas at irregular periods. Pumping wells vary in the quantity of air-gas mixture and gasoline vapors given off during their pumping period, increasing in both as the fluid head is lowered.

Therefore air-gas mixtures should be handled at all times as if they were explosive mixtures and all precautions taken to prevent or at least check the extent of any explosion.

Methods for Preventing Explosions

Lightning arrestors or baffles made of steel shavings, small pipes and other cooling devises copied after the principle of the miner's safety lamp have not always worked. It has been assumed that burning gases would be cooled below the ignition point in passing through them and it is reasonable to expect this to be a fact but it is highly probable that after an explosion has taken place, the arrestors function as a highly developed burner, supplying fuel to the burning gases on the low pressure or explosion side of the arrestor. This would result in an intense heat at that particular point and by conduction would soon heat the arrestor hot enough to ignite the mixture behind it. So it seems very probable that a series of explosions follow after ignition at some point in the high-pressure system. If this is true the extent of any explosion would not be confined between arrestors but would travel in the direction of the air-gas supply which would be toward both the compressor and the intake well if the explosion burst the line and no checks were on line or wells to prevent gas from feeding back from the sand into the line.

Air-Gas Slugging

A method of inserting a nonflammable gas or pure air slug between air-gas mixtures has been used. This is accomplished by an automatic valve on the suction side of the compressors or gathering system. This valve alternately passes a quantity of air-gas mixture and then a quantity of pure air, thus putting a slug of nonflammable gas between mixtures of air-gas.

This system will not prevent explosions but it should confine the explosion to that particular air-gas mixture in which it occurs as it will be separated from other air-gas mixtures by a slug of nonflammable gas. Aside from the dangers of using pure air or a gas-air mixture for restoring pressure there is the problem of confining this mixture to a certain lease

*Before Natural Gas Association of America, Cincinnati.

[1] D. B. Dow and L. P. Calkin, "Solubility and Effects of Natural Gas and Air in Crude Oil." Bureau of Mines Serial No. 2732.

[2] Burrell, G. A., "Hazards in Handling Gasoline." Technical Paper 127, Bureau of Mines, 1915.

[3] G. A. Burrell and I. W. Robertson, "Effects of Temperature and Pressure on the Explosibility of Methane-Air Mixtures." Bureau of Mines Technical Paper No. 121, 1916. G. A. Burrell and Alfred W. Gauger, "Limits of Complete Inflammability of Mixtures of Mine Gases and of Industrial Gases With Air." Bureau of Mines Technical Paper No. 150, 1917.

LETTER 98 YEARS OLD DESCRIBES "FIRST" OIL WELL IN KENTUCKY

GLASGOW, Ky., May 7.—While cleaning out a desk formerly used by the late E. T. Ellison, now in the office of the Consolidated Gas Co., Louis Fisher, service manager for the local company ran across a 98-year-old letter of historical interest to oil men.

The letter was written by the late Thomas Ellison, father of the late E. T. Ellison, and was addressed to the late Edmund Rogers, who lived at that time at Mount Hope, in Barren County. The letter was delivered by a messenger. "Dick" according to the notation on the fold of the letter, envelopes not being used at that time.

The oil well referred to in the letter is believed by those around here who are conversant with its history, to be the first one drilled in Cumberland County, and claimed to be the first in the United States. The letter follows:

Burksville, March 15, 1829

Mr. Rogers,

Dear Sir:

I rec'd your letter by Dick informing me that you would take unconditionally Sixty Two Dollars & fifty cts for your Salt roan filly. I'll take her at the price & will fill your request by sending you .....'s account which is fifty Dollars. I wish you to keep the filly for me until an opportunity offers to bring her down. If Joseph can bring her you may send her down by him.

We are all in tolerable health except Mrs. Coleman, her health is not good.

We have nothing new except Cols. Emerson & Stockton in boring for Salt on Renick struck a lake of oil. The well has been for the past four days throughing out large quantities of rock oil. It would spoout at least fifteen feete above the top of the ground as large a stream as a man's boddy, perfectly pure. Cumberland River has been covered from bank to bank for three days. The River was this evening set on fier it burnt for at least a mile in a stream or sheat of fire.

I have no dout but in the time it has been running as to speke in the bounds of reason that five hundred thousand gallons of oil has run down Cumberland River & is still running but not quite so fast. Col. Emerson barreled up twenty barrels of it. It burns well in a lamp & is said to paint & oil leather & I have no dout it will be a good medicin for many complants particularly the Rumatick pains. The whole atmospheir is perfumed with it. It is a compleat Phenominon. I could write a whole sheet and not say half.

It is late & I am sleepy, I am yours &c

THOS. ELLISON.

or leases, especially if the adjoining property produces gas for domestic and industrial uses. The movement or direction of flow of any gaseous substance cannot be absolutely controlled from the surface. Any gas that is nonflammable should not be used adjacent to a property that utilizes the gas for fuel purposes unless there is a barrier to gas movement between the two properties. If air becomes mixed with this fuel gas it may cause a serious and disastrous explosion in the distributing system or if a nonflammable gas, such as carbon dioxide or nitrogen, is mixed with this fuel gas the fires may go out and cause asphyxiation or an explosion when flammable gas follows the slug of nonflammable gas.

Effect of Structure on Recovery

When gases are forced into a sand they follow the line of least resistance, frequently following the coarser or big pay streaks. If no such streak is present air or gas will tend to follow the higher parts of the structure or the top of the sand, while liquids will tend to follow the lower part of the structure or the bottom of the sand. Air and gas tend to rise to the top of the structure while liquids will seek the lowest level. Hence it is advisable to locate the air or gas intake wells on top of the structure as there is less resistance to the movement of air or gas through a partially or wholly depleted oil sand and production can be effected quicker than by forcing the oil up through this depleted sand. Another serious factor affecting the choice of inlet and outlet well locations is that when oil is forced or permitted to enter a dry or partially depleted sand some of this oil is lost. The practice of forcing oil from the bottom or flanks of a structure up through a dry or depleted sand is a serious waste. For every barrel of oil produced in this manner there is left in the dry sand three or more barrels of oil that cannot be recovered by any process now known except mining. For these reasons air or gas intake wells should always be located higher on the structure than the producing oil wells and in no case should oil ever be produced through a gas or dry sand.

There has been an erroneous impression throughout the Appalachian Field that oil and gas did not conform to structure regardless of the fact that I. C. White conceived and proved the anticlinal theory in West Virginia many years ago. Detailed subsurface mapping[4] shows that accumulations of oil and gas in many of the eastern fields conforms to structural conditions in the reservoir rocks. The restriction of oil and gas production to anticlines is especially notable in the sands of the lower Mississippian beds and those of the Chemung formation. In certain areas the sands of the Venango group of Catskill age are definitely known to be oil saturated in synclines although there is excellent evidence to show that the limits of oil production in fields which produce from this group of sands is due to lithologic changes in the reservoir rock rather than to structural conditions.

Selection of Intake Pressure Wells

Wells having large initial and flush production undoubtedly have more completely drained the sand in their immediate vicinity because of having utilized the high initial gas pressure from areas beyond their radius of oil drainage. Wells of smaller initial and flush production were frequently the wells that were drilled after the wells of larger production had been drilled and if sand conditions were fairly uniform they would have been just as large if the original gas pressure and volume had not been depleted by the first wells drilled. Hence there is probably more oil in the immediate vicinity of these smaller wells than near the large wells that have more completely drained their areas.

Therefore, it is advisable to make the wells of larger initial production the intake air or gas wells and have less distance and resistance to force the oil that is nearer to the adjoining wells that originally had a smaller initial and flush production.

From a study of production decline curves and sand conditions in conjunction with pressure recovery it appears that a greater recovery can be expected from wells showing a long gentle decline. Wells having a sharp or steep production curve will not respond so readily to air or gas pressure. Such wells should be made intakes. Wells drilled into tight sands are ordinarily very small producers. This is the result of the great amount of resistance that the very small pores of a tight sand offer to any fluid moving through them. Such wells should be made air or gas intakes as it is too much to expect them to ever be anything but poor producers.

In old fields where no records are available, or in fields having a low initial gas volume and pressure, or where the initial and flush production were about the same for all wells it is a method of trial and error to find the best wells for taking air or gas and the best wells for producing.

Reversing the direction of flow of either the oil or gas and air has no detrimental effect on the sand or on recovery as long as the oil is not forced into a dry sand. Gas and air tend to squeeze the oil down into the bottom of the sand with a resultant movement of the oil in a direction toward the bottom of the sand in the producing well.

Preparation of Intakes

In preparing a well for taking air or gas or a combination of both it is advisable to thoroughly clean the well of all sand cavings and other debris that might plug up the pores in the sand. A newly-drilled well has the advantage over an old well in that the walls of the hole are clean and the pores are not plugged with paraffin, muck, etc.

All intake wells should be cased or tubed to the top of the oil sand and any open hole below the oil sands should be plugged back, especially if any sands below the oil sands are exposed. Otherwise the gas or air may migrate into other sands above or below the oil sand and escape without doing useful work. Producing wells should be prepared in a like manner, as the air or gas will migrate into other sands, especially if any back pressure is held on the well. But the loss of the air-gas mixture after it has done its work is not the most serious possible loss as it may open up passage way that will dissipate the pressure and may carry gasoline and oil into sands and reservoirs beyond the reach of any recovery system. Both intake and producing wells require careful preparation for pressure recovery methods.

Cleaning Out

In the past it has always been necessary to clean out at infrequent intervals to keep wells producing. This is just

[4]Paul V. Torrey, Assistant Petroleum Geologist, U. S. G. S. Personal communication, April 18, 1927.

Removing Paraffin from Wells

Report of Investigations by Bureau of Mines on Methods and Tools Used in Combating This Problem

By C. E. Reistle, Jr.*

In producing crude oils of paraffin base and of mixed base the producer is often confronted with the problem of preventing and removing paraffin that settles out of the oil and accumulates in the well. This paraffin consists of heavy waxes with some sand and asphalt, and varies in consistency from a soft semifluid wax to a hard gummy wax. This problem is by no means a new one as troubles have been encountered with it since the earliest days of the industry. However, with the discovery of the Panhandle, Texas, Field and other large fields in which extensive troubles have been encountered, the problem has assumed added importance.

In new fields the most serious trouble with paraffin is in the flowing wells. The paraffin accumulates in the casing and tubing of such wells and unless removed will completely plug the well. This condition also develops in wells which are produced by gas lift, and often presents a serious problem when this method of producing the oil is used. In older fields paraffin is also deposited on the face of the producing sand—that is, on the walls of the hole—or within the interstices of the sand near the hole, and this materially affects the amount of oil that can enter the well.

In this paper consideration is given to the problem of removing the paraffin from the natural flowing and gas lift wells. The tools and methods described have proved to be a satisfactory and economical way of combating the paraffin problem in flowing wells. These tools do not prevent the deposition of paraffin, but when properly used remove it before it accumulates to a point where the production or operation of the well is affected.

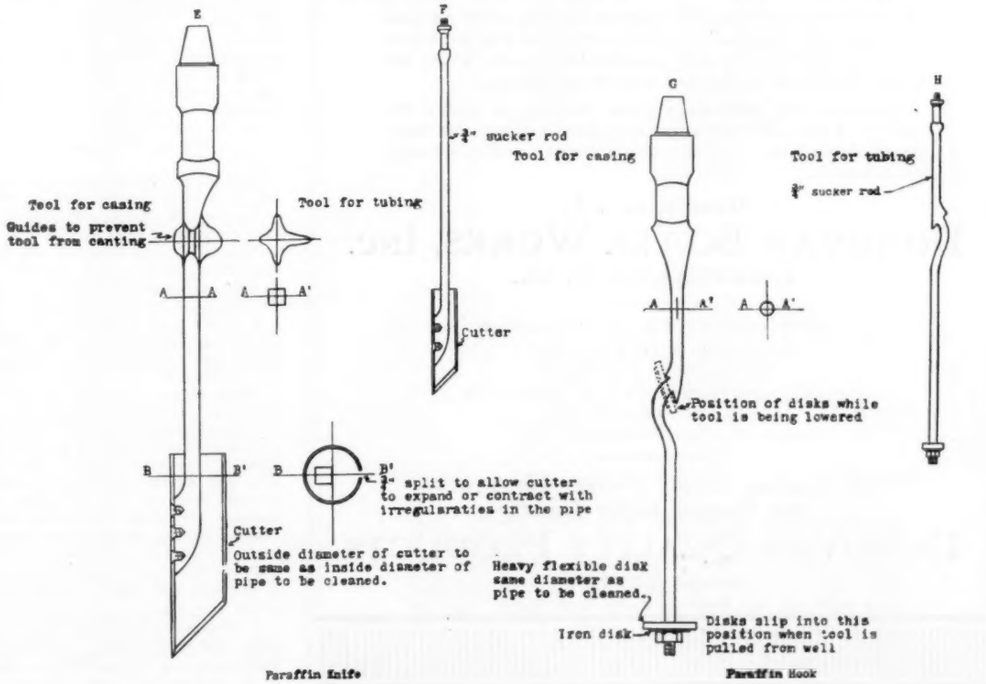
Paraffin Hook

The paraffin hook consists of a shaft on which is placed a disk, of the same diameter of the pipe to be cleaned. This disk is usually made from several layers of old belting and is reinforced by a metal disk slightly smaller in diameter. The shaft is so shaped that the disk is held in a diagonal position while being lowered into the casing, but slips into a horizontal position when pulled from the well, in order to remove the paraffin. The shaft is made with a tool joint so that it may be attached to a sinker bar, a short stem, or jars to force it down through the paraffin; a polish rod may be used as a sinker bar for the tool used in tubing. A drawing of the tool for use in casing is shown at G, and for use in tubing, at H, in the accompanying chart.

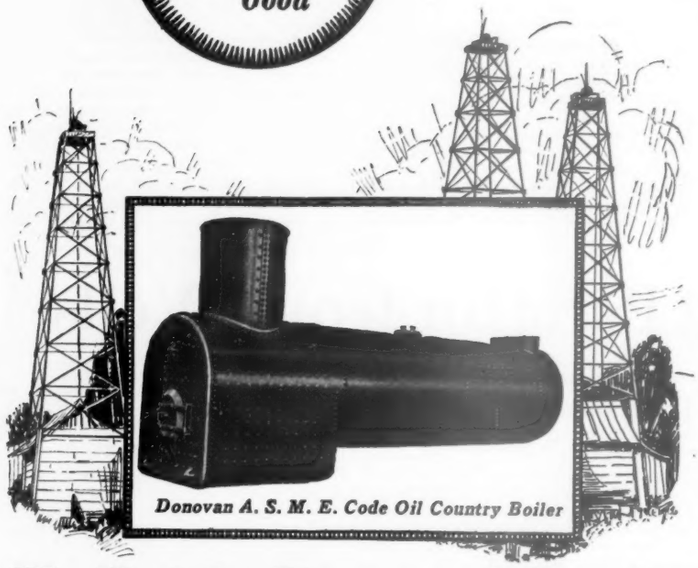
This tool removes the paraffin from the well instead of merely cutting it from the pipe. This feature makes the tool valuable for use in wells where the paraffin has completely plugged the pipe, or where the deposit is hard and extensive. In removing large deposits the tool should be run several times, taking only a part of the deposit each time in order to prevent overloading the equipment. By changing the size of the disks the tool can be used in different sizes of pipe, which eliminates the necessity

(Continued on Page 180)

*Bureau of Mines, Department of Commerce.


E
Tool for casing
Guides to prevent tool from canting
Tool for tubing
A A A A'
B B' B B'
Cutter
Outside diameter of cutter to be same as inside diameter of pipe to be cleaned.
Paraffin knife
F
⅜" sucker rod
Tool for casing
Cutter
G
H
Tool for tubing
⅜" sucker rod
A A' A A'
Position of disks while tool is being lowered
⅜" split to allow cutter to expand or contract with irregularities in the pipe
Heavy flexible disk same diameter as pipe to be cleaned.
Iron disk
Disks slip into this position when tool is pulled from well
Paraffin hook

Donovan Boilers are Consistently Good



Donovan A. S. M. E. Code Oil Country Boiler

We Had the Pleasure of Showing the Chief Engineer

of one of the leading oil companies thru our plant on the occasion of his visit to Parkersburg.

At the time we were testing a 60 H.P.—150 lb. Working Pressure—ASME Code—Donovan Boiler. The engineer was naturally interested in the test. He had seen tests before on other makes of boilers and he had seen them in use also for he has had some forty years experience in the oil country.

The boiler was carrying 225 lbs. hydrostatic and was absolutely bottle tight. Not a leak could be found, tho Mr. Engineer hunted religiously for one.

He checked the design and construction carefully, not overlooking a thing. Then without reservation, he pronounced the Donovan the best he had seen.

A bit later, the company employing this man needed boilers. He insisted on Donovans and the company acted on his advice and bought Donovans, even tho there were other cheaper boilers available.

Donovans are unusually good boilers in every respect. They are just what you need. They can save you a lot of time, trouble and expense and are ready to prove it.

Manufactured by

DONOVAN BOILER WORKS, INC.

PARKERSBURG, W. VA.

NEW YORK OFFICE—30 Church Street

FRICK-REID SUPPLY COMPANY

Mid-Continent Distributors

GREAT NORTHERN TOOL & SUPPLY CO.

MIDLAND IRON WORKS

Montana Distributors

All Leading Supply Houses Throughout the Eastern Fields Handle

DONOVAN QUALITY PRODUCTS

NONE BETTER

as essential with the newer methods of recovery, and is imperative where the formations are soft and subject to caving.

The expense of cleaning out is offset by the greater quantity of air or gas that can be forced into the sand and possibly at lower pressures due to less resistance. The producing wells are usually affected by the increased flow of gas and oil under high pressures. The walls cave, sand and muck are forced off the walls, causing frequent pulling of rods and tubing unless the wells are thoroughly cleaned before the pressure hits them. The expense of cleaning is compencated for by increased production and less pumping trouble.

Cleaning out by cable tools is commonly slow and expensive. The quantity of surface equipment such as derrick, machinery and tools that has to be moved, erected and torn down in addition to the slow process of cleaning out makes the cost of this method of cleaning out almost prohibitive. But in some cases where back pressures have to be held on the formations at all times to keep them from caving cable tools solve the problem very nicely. By means of a fluid head any desired back pressure can be held on the sand while cleaning out.

The use of compressed air or gas to clean out is much cheaper and quicker than any method so far introduced. Especially if high pressure air or gas lines are readily available on the property and if there is sufficient compressor capacity to supply the demand. The equipment for an air cleaning outfit, consisting of a pulling machine, tubing tools and a few high-pressure connections are easily moved by a team or a tractor at one load and it only takes a few hours to tear down and move and erect.

If high pressure lines are not laid at strategic points on the lease or, if it is not deemed advisable to use the compressed air system of field lines for cleaning out, a small portable compressor unit and complement of air receiving tanks are necessary equipment with the pulling machine. In most cases a well can be cleaned out with air in a week or less.

Producing Problem

One of the most serious problems in pressure recovery is the producing of the oil. During the early stages the pressure and increased movement of fluid brings in paraffin, sand and muck and frequently causes the walls to cave. Cups are quickly cut out, plungers and barrels wear rapidly and sand up.

Where air is used the balls and seats or similar equipment, working barrels, plungers and tubing commonly corrode very rapidly especially if corrosive waters are present. The alternating action of wetting by water and drying by air may promote rapid oxidation and pitting even if the water is not corrosive. This cutting or corrosive action cannot always be eliminated by the use of noncorrosive material as minute flaws in the structure and composition of the metal are quickly eroded.

High differential pressures between intake and outlet wells have a tendency to bypass and quickly establish channels that are hard to control. If it is necessary to go to high pressures due to tight fine-grained sands a back pressure should be held on the producing well, as a small differential in pressure between the hole and a few feet back into the sand is all that is necessary to cause movement of oil into the hole. Any higher differential in pressure is a waste of energy at a point where it cannot do any useful work. It has been demonstrated in laboratory experiments that the drop in pressure due to resistance of gas and liquids passing through a sand is not directly proportional to the distance traveled. The greatest drop in pressure occurs a short distance back from the face of the sand near point of discharge, which shows that a very high back pressure can be held without affecting production.

Bennett[5] and Sclater demonstrated in the Panhandle Field that the rate of fluid entering a hole is not affected by pressure until about 85 per cent of the rock pressure is attained, after that pressure is reached the rate of flow is materially decreased.

The quickest way to find the desired differential pressure is by trial and error with back pressure. The highest back pressure which produces the same amount or slightly less oil than was produced at atmospheric pressure gives the desired differential.

Holding back pressure either by gas pressure on the casinghead or by high fluid head, retards the influx of sand, muck, etc., to a considerable extent without materially decreasing the oil production. However, in extreme cases it is necessary to flow the wells by the gas or air lift method as pumping troubles cannot be eliminated.

The gas or air lift method is very expensive especially where the quantity of oil produced is small, the wells deep and where the annular space between tubing and casing or walls of the hole is large. The quantity of air or gas for flowing under these conditions is necessarily large. The proper design and use of jet nipples or orifices in a small siphon line run in the tubing reduces materially the quantity of air needed.

Walker[6] in his tests on lifting water from gas wells showed that in a well 1,750 feet deep with a fluid head of 42 feet water could be lifted at the rate of 33.28 gallons per hour with gas at a rate of 480 cubic feet per hour, which is a ratio of about 607 cubic feet of gas per 42-gallon barrel of water. This was accomplished with a starting gas pressure of 155 pounds and a one-sixteenth inch jet placed 100 feet off bottom in a three-fourths inch siphon line.

However, even with efficient air or gas lifts for producing small wells the costs will be high. High pressure air or gas lines will be required for each well so operated and separators for gathering the discharged gas will be necessary at least for small groups of wells if not for individual wells.

The complicated system of air or gas recovery combining all phases of producing both oil and gas makes it necessary for complete co-operation of all departments. Also in most fields it will be necessary for all operators to co-operate in restoring pressure. Because of their migratory nature neither oil nor gas can be easily confined within the surface boundary rights and they may be forced across property lines.

The pool should be developed as a unit to prevent waste of both oil and gas and to curtail an economic waste. The various property and royalty owners should group their holdings, each taking his prorata share of stock in the unit company or any other equitable division of the oil and gas produced.

[5]E. O. Bennett and K. C. Sclater, "Volume and Pressure Control for Wells on Gas Lift." Delivered before the annual meeting American Institute of Mining & Metallurgical Engineers at New York February 14 to 18, 1927.

[6]Morgan Walker. "Dewatering Gas Wells by the Gas Lift." Mining & Metallurgy, March 1, 1927. Volume 8.

SELLING OF GAS AND GAS APPLIANCES

(Continued from Page 75)

ing that trade-mark thereafter locally and nationally.

"The primary purpose is to sell more gas by providing for the installation of more and better appliances in the home, and by creating and retaining in the minds of the homemakers, a greater appreciation of the importance of domestic gas service as an aid to their comfort and convenience.

"The feature of the plan regarding the use of high grade appliances, constitutes to some extent the fulfillment of a public responsibility. It arises from the desire to create a demand for domestic appliances constructed in accordance with standard specifications of the industry, to safeguard the public health, and to guarantee efficient and satisfactory service to the customer, and thus fulfill our obligation to the American public. But the commercial results of trade-marking and thus encouraging the sale of better appliances are no less important to the in-

dustry than its significance from the standpoint of safety. Just as a poor appliance is a handicap to greater sales of gas and an invitation to our competitor, so a quality appliance, rendering satisfactory service day in and day out, is the industry's better salesman for promoting the use of gas in the home."

Better Appliances

The third outstanding factor in this matter of selling is the applicance in which the gas is to be burned. In the past, equipment has not been all that it should be. This lack is not altogether a charge that can be made against the manufacturer. The gas company had not developed its product to the point where it was sufficiently profitable for the manufacturer to develop the high grade appliances that are found available today. It is generally true that the manufacturers have co-operated with the industry and have advanced their products as rapidly as the gas industry has proved itself capable of selling such better product.

Natural gas companies particularly have been handicapped by the wasteful appliances used by their customers. Government publications have shown the immense amount of gas wasted by low-set cooking range burners, short coil water heaters and burners placed in appliances which were designed for the use of solid fuels.

Most gas companies have made progress in informing the public regarding more modern appliance design, proper burner adjustment and correct usage. Recommendations have not been uniform because they have been based on local laboratory tests, published data from various sources or merely ideas of the particular individuals coming in contact with the public.

Now, however, a definite and forceful help, a national institution with a national viewpoint, has stepped in to help. The American Gas Association Testing Laboratory is at work testing various kinds of gas appliances. Approval requirements for ranges, tubing, space heaters, water heaters, gas furnaces, and gas boilers have already been drawn up and lists of many approved appliances bearing the Blue Star of approval have been published. Tests are made with different gases under varying conditions so that the approval of the laboratory is national in scope.

The effect of the laboratory must be to improve the safety, economy and general satisfaction of gas apliances. The gradual elimination of poor appliances must raise the level of gas utilization. The appreciation of gas by the general public due to greater satisfaction in its use and the wider use of gas must result.

Sale of Appliances

Fourth, it must be determined whether gas appliances are to be sold by the industry or whether the sale of appliances shall be left entirely to outside agencies. Opinion varies greatly on this subject. Apparently statistics are available to prove that both schemes have been successful.

Generally, however, best results seem to have accomplished the sale of merchandise by the utility that has had a true understanding of the real purpose of the selling of the merchandise. Where the utility has been unfailing in its realization that gas appliances are sold by it merely as a means of developing larger and more satisfactory gas load and that the primary object of the merchandising has not been the accumulation of a profit from the merchandise itself, it has been found that relations between utility and dealers have been extremely satisfactory and that all have profited.

If the utility is to merchandise, however, it should do so along lines that represent best practices and sound business. Prices should be maintained, not cut. The grade of the merchadise should certainly be the best obtainable from the points of view of efficiency, safety and maximum value per dollar. All merchandising helps should be employed, such as advertising, demonstration, introductory sales, attractive window displays, and the like, but none of these means should be employed except with the thought that they are fair means and those which are likewise within the reach of the high grade, responsible dealer or department store.

Some utilities have developed the merchandising situation to a point which has resulted in definite co-operative relations with the dealer. Often, even special inducements made by the utility are offered simultaneously by the dealers.

The electrical industry has improved its situation by the development of the Electric League, an institution found in practically every large city. It might be that the gas industry can increase the results obtainable by merchandising if it institutes some similar co-operative scheme.

Yet, through it all, the selling of appliances by gas companies appears to be justified only if the utility bears in mind continuously the reasons why it is in the merchandising business, namely:

1. To increase the volume of gas sales.
2. To improve the load factor.
3. To put at the disposal of the customer safer, more efficient and generally more satisfactory means of using gas.
4. To create a public demand for such better equipment, so that dealers may share in the benefits resulting from such demand.
5. To improve relationships with the public by the establishing of better contacts resulting from sale by the company and use by the customer of satisfactory equipment.

Use of Equipment

The fifth and final means of selling that can be considered in this paper is the one that deals with the use of the equipment by the customer after he has provided himself with that which is properly designed. Generally, this service is now known as "Home Service," although a broader interpretation seems preferable.

Many are inclined to think of Home Service as a series of cooking demonstrations. It should have a far broader meaning. Cooking demonstrations are usually nothing more than means of attracting and holding the attention of the public.

Home Service, or its equivalent, insures, first, a satisfactory installation. The importance of the installation cannot be overestimated. The best range or furnace or water heater cannot function or give satisfaction if it is improperly installed. It should be the responsibility of the sales department, if not of the Home Service branch of that department, to make sure that installations are satisfactory.

Sometimes this involves even the house-piping. Often this problem is met through the use of special employes who have contact with architects and builders and are charged with the responsibility of seeing that such architects and builders understand the requirements of building with regard to adequate piping.

With the equipment installed properly, it is necessary to insure the best use of this equipment and to encourage increased use. This does not necessarily require special and individual calls. In some instances, it is desirable to follow up the installation of new equipment such as automatically controlled ranges. This assures that the purchaser understands the meaning and use of the heat control. Much good can be done, however, through contacts with special groups, by means of lecture work and special demonstrations.

But it all boils down to permitting the accomplishment of that which the customer wants. It is the job of every employe of the company. It requires competitive rate structures. It calls for everyone on his toes all the time. It means selling.

SOVIET EVAPORATION PATENT

The Soviet Government has taken steps to obtain patents in the United States for a new Russian invention which it is claimed eliminates the evaporation of gasoline and other volatile petroleum products, according to an Associated Press dispatch from Leningrad.

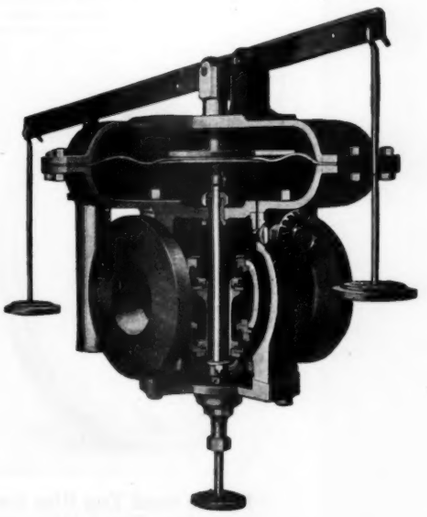
This Regulator Stays Tight in Service

THE simple, effective design of the Davis Low Pressure Automatic Gas Regulator produces an automatic valve that will handle large reductions in pressure accurately and dependably.

The double seated balanced valve is especially designed to close tight and to stay tight in service. Removable soft discs, seat cage removable without disturbing the valve body and the typical Davis simplicity of design and operation are features that set this Regulator apart from all other types.

Hundreds of representative producers use the Davis Gas Pressure Regulator for automatic reduction of high pressures, (250 pounds or less) down to low pressures. The Regulator can be furnished for any service pressure specified.

Send for the catalog with complete descriptions of Davis Valve Specialties.



G. M. DAVIS REGULATOR COMPANY
409 Milwaukee Avenue
CHICAGO, ILLINOIS

WESTCOTT & GREIS, *Inc.*
Sales Engineers
TULSA LOS ANGELES DALLAS

DAVIS VALVE
STEAM SAVERS SINCE 1875
SPECIALTIES

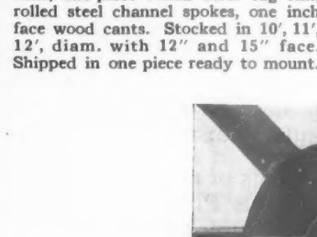
O&GJ 5-12Gray

Moore Steel Band Wheel

Built for long, hard usage. Steel plate rims, one-piece rolled steel tug rim, rolled steel channel spokes, one inch face wood cants. Stocked in 10′, 11′, 12′, diam. with 12″ and 15″ face. Shipped in one piece ready to mount.

Riveted Flanges

The flanges are securely riveted in our shops; angle reinforcements give additional strength to spokes.



Moore Steel Tug Rim for Wooden Band Wheels

One piece, double V groove, rolled steel rim. Diameter 7′.

Other Moore Products

Steel Derricks
All Steel Drilling Rigs
Crumley Pumping Rig Units
Steel Pitmans · Crown Blocks
Steel Walking Beams

World Wide Service for Twenty Years

Here is the

MOORE STEEL CALF

BUILT for strength, the Moore Steel Calf Wheel has an extra heavy steel pipe shaft, heated and shrunk on the gudgeons and riveted in place. The channel steel spokes are bolted tangent to the shaft, giving a direct push at its circumference. This construction assures maximum power.

The brake rim is of rolled steel plate segments. The sprocket rim is bolted to the inside rim which extends ½″ above the brake cants to prevent interference between the brake band and the sprocket chain.

Moore Steel Calf Wheels conform to A. P. I. dimensional standards in all respects.

Moore Al

LABORATORY WORK OF INTEREST TO INDUSTRY

(Continued from Page 75)

ranges. Approval tests were commenced on water heaters on April 1 and only recently approval tests on house-heating appliances were begun. As a result the gas industry now has a substantial list of the three major types of domestic appliances to select from.

Improvement Noted

In the short time that our testing establishment has been in operation we have noted great improvement in the design and construction of gas ranges and room heaters when operating on natural gas. Appliance manufacturers, generally being located in manufactured gas territories and having their greatest potential markets there, have designed their equipment principally for the use of such gas. In fact, until recently there was a rather general impression that natural gas, on account of its inherent characteristics, could not be burned as efficiently or as safely as manufactured gas. Our laboratory has largely disproved this theory. We have found that where the proper size ports, throats, orifices and mixing tubes are used, that combustion can be obtained resembling very closely the burning of manufactured gas. Hence the old idea that gas burners should be lowered and special types of construction used in natural gas territories is generally incorrect.

Research on Mixed Gas

A development of vital interest to natural gas men is the research work recently undertaken by us on mixed gas. This problem was assigned as one of the principal items of an economic survey of the manufactured gas industry authorized by the executive board of the American Gas Association at its last annual convention. This problem was first presented to our technical section which, realizing its magnitude, deemed it advisable to appoint a subcommittee to supervise conduct of this work. This committee was placed under the leadership of F. C. Weber, gas engineer of the Henry L. Doherty Co. Mr. Weber's committee, after a very careful investigation, decided that the testing laboratory in Cleveland offered the best facilities for the successful conduct of this research.

In many localities it is more economical, and in others an absolute necessity, to mix gases. The diminishing supply of natural gas in some territories, and the advent of large quantities of by-product coke oven gas in certain manufactured gas sections, makes this subject one of the most important facing the gas industry today. It is a pleasure to report that a number of natural gas companies, largely at the request of your president, have decided to assist in the financing of this new investigation. At present four major phases of the problem are being considered. They are:

1. Effect of varying specific gravities of gases, other factors remaining constant.
2. Effect of varying heating values of gases, other factors remaining constant.
3. Result of varying both heating values and specific gravities during the same series of tests with other items remaining constant.
4. Effect of pressure variations.

Will Require Three Years

In beginning our research on natural gas, it is our present intention to stimulate so far as possible the first steps that ordinarily occur when natural gas is mixed with a blue water gas, obtaining heating values around 950 B.t.u. These findings will be designed to show how far gas companies can go in their mixing processes without requiring the readjustment of most of their appliances. Our experiment should also show how far natural gas can be used as an enriching agent for manufactured gas without encountering difficulties from a utilization standpoint.

It is estimated that the completion of this problem will require about three years and for this reason the most important portions of it will be undertaken first. All of the major types of domestic appliances as well as a number of industrial types of equipment will be used during these findings. Approved appliances so far as possible will be used in our examinations, and the conditions of tests specified in each of our approval requirements will be followed in determining the combustion characteristics of each kind of mixed gas; therefore the usefulness of each mixture from a utilization standpoint will be the deciding factor in determining the value of each kind of gas.

In connection with this research it has also been suggested that a study of the effect of compression on gases should be made. It is known that when some gases are delivered at different pressures their heating values often vary. Certain portions of them are often condensed and deposited in high pressure transmission lines, reducing their usefulness and adding further difficulties to the solution of our distribution problems. All of the experimental work on mixed gases should not only be interesting to natural gas men, but if properly solved should prove one of the most valuable scientific contributions recently made to your business.

Domestic Load Decreasing

Some recent computations indicate that the domestic load, which has always been regarded as the backbone of our business, is decreasing when considered in percentage of the total output. Various theories have been advanced explaining this condition, chief among which has been cited the changing habits of our customers. If this is true then our greatest sales resistance does not come from competing fuels such as coal, oil or electricity, but from the fact that we are failing to recognize the necessity of devices designed to add further to the conveniences and comforts of the modern home. We are all agreed that we must compete for our rightful share of the housewife's time and attention as well as our portion of the dollar she spends, therefore the decrease in domestic consumption must be met by shaping our sales policies in such a manner that they will be surrounded by distinction, new styles, fads and habits of use of an interesting nature to the housewife. The testing laboratory and the Blue Star plan offer an ideal means for accomplishing this purpose. The former offers a new standard of gas service trade-marked by the Blue Star seal of approval. The latter is the means of acquainting the public of the desirability and necessity of such plans.

Commercial Aspects

Most gas companies have always given greater attention to the advancement of engineering rather than the commercial aspects of their business. This condition can perhaps best be attributed to the fact that our sales until recently have largely taken care of themselves. Production, distribution, rate problems and public relations have so taken up the gas company executive's time, that there has been little left for the application of any concerted effort in building up an effective sales organization. This is unfortunate, for no product regardless of how meritorious it might be can be properly sold to all the public without the aid of the commercial man. What our industry now needs is not only additional appliance salesmen but more agencies through which we can adequately tell the story of gas. The testing laboratory hopes to assist in this work by offering a reliable index by which our customers can judge the quality of gas merchandise. Just as an unreliable product is a handicap to greater sales, so is a quality product rendering safe and efficient service day in and day out one of the industry's best agencies for promoting the greater use of gas.

Gas-Fired Refrigerator

The gas-fired refrigerator, one of our lates recruits, is now available in at least four different makes. It is quite true that not all of these machines are mechanically perfect, yet the gas industry should not throw the entire burden of their development upon the manufacturer. He should be encouraged by purchasing his products, installing them and

we don't
blame the
purchasing agent
for not buying
every valve
that is claimed
to reduce the
maintenance expense
of the Refinery
but we do know
that when it comes
to a show down
there isn't
a valve made
for use on
sludge and acid
clay lines
that comes up
to the standard
of a Duriron
Plunger Release
Plug Valve
The Duriron
Company
Dayton, Ohio

Quality
You Can Depend On

The efficiency of your operating equipment depends in as great a measure on the character and quality of the lubricants used, as it does on the type of the equipment itself and the skill of the operating personnel.

Humble Oils are specially refined so as to maintain the right lubricating body and the proper viscosity on bearings which operate under high speeds, as well as on those which carry heavy loads.

There is a Humble Oil which is specially prepared for every operating need, whether in your plant, your trucks, or in your automobile.

The staff of the Humble Lubrication Engineers covers practically every section of the Mid-Continent and Coastal Fields. Their service and expert advice are available on all lubrication problems. Our engineers are specially trained in the lubrication of casing head and pipe line equipment.

We shall be glad to make tests and recommend the right oil for your machinery. Wire, phone or write and one of our Lubrication Engineers will call and discuss your lubrication problems with you.

Reg. U. S. HUMBLE OIL & REFINING CO. HUMBLE OILS HOUSTON, TEXAS Pat. Off.

Humble Oil & Refining Co.
HOUSTON, TEXAS
Producers - Pipe Lines - Refiners - Marketers

assisting in working out the practical solution of his service problems. On numerous occasions it has been suggested that our laboratory test refrigerators. Before we can do this it would be necessary to prepare national testing standards. At the present time I believe that this would be a great mistake as there is no one, and certainly not a competent committee, that could be found to draw up reasonable approval requirements. For the laboratory to attempt to approve refrigerators in their present state of completion I believe would hinder rather than promote the success of a very useful art. Later we will undoubtedly take up this work, but at the present its development is plainly up to the entire gas industry.

Gas Ordinances

The Baltimore gas ordinance was recently attacked by several gas range manufacturers. Their suit was based principally on what was termed an illegal transfer of administrative authority by Baltimore to the American Gas Association. While this case has not been definitely settled, it is believed that its final outcome will not only result in a strengthened gas ordinance but will leave the relationship of Baltimore and the laboratory as it was. The city of Hartford, Conn., recently adopted a gas ordinance requiring in principle the approval of appliances sold or offered for sale in that city by the American Gas Association. Other cities throughout the country are contemplating similar regulatory measures. Where the need for such legislation exists our association when requested will assist the interested city in the preparation of an ordinance that is not only practical but workable. The facilities of our laboratory are also a great aid to any city contemplating or enforcing such a plan. Few municipalities, regardless of their size, can afford the expenditure necessary to equip a laboratory and maintain adequate testing facilities.

During the last annual convention of the American Gas Association its members, realizing the necessity of supporting the laboratory to the fullest extent, passed a resolution which in a sense binds its member gas companies to confine their appliance sales exclusively to laboratory approved appliances as rapidly as satisfactory lists of them are made available. This was a very timely action and one that might very well be emulated by the Natural Gas Association. As I have stated, the gas industry has already invested approximately $250,000 in its national appliance testing program. If this investment is to amount to anything, then every gas company should support a plan that is designed fundamentally to protect the future success of its business. Still further, manufacturers who are spending large sums of money in bringing their products up to standard are entitled to all the encouragement and support that can possibly be given them. In fact unless this support is forthcoming the whole appliance testing program will fail and the industry will be taking a backward step in the conduct of one of the most important parts of its business.

Era of Expansion

Leading men of the gas industry now agree that our business stands on the threshold of a wonderful era of expansion. After all, there seem to be no fundamental reasons why it should not. If our customers desire energy in the form of heat, then, where gas is available, it is the logical fuel.

I do not anticipate any serious and general competition in the future from electricity, solid or liquid fuels. The practice of transforming heat into electrical energy and then back to heat again is attended with so many losses through these various transition stages that it makes this practice not only uneconomical but scientifically unsound. Where electricity is developed from coal only an average of about 12 per cent of the original heat in a pound of fuel is finally delivered to the customer; whereas in the case of gas probably 80 per cent of the original amount of heat is supplied.

To the natural gas companies who are faced with the necessity of having to change their gas supply, scientists inform us we have a sufficient supply of coal available to last for 1,000 years. Although coal is a practical gas-making fuel, its use in solid form is accompanied by so many disagreeable features that in the not far distant future there will certainly be restrictive legislation passed against its general use. Doctors and municipal authorities in many of our large eastern cities are now seriously considering the smoke evil. Quite a number of cities have smoke ordinances and these are sure to become more restrictive as the public learns of the deleterous effects of smoke and its attendant gases on the human system. Considerable evidence has already been collected in Baltimore and elsewhere to show that the curve of respiratory diseases almost exactly parallels the smoke curve. Further than this, it is becoming generally recognized that sunshine is a necessary adjunct to good health, all of which seems to point to the fact that gas will eventually become the generally accepted domestic fuel.

With thermostatically controlled gas fired appliances to heat our homes in winter, and refrigerating systems to cool them in summer, we may look forward to a time when gas will play the most important part in adding to the future comforts and conveniences of our customers' homes. The testing laboratory has a definite place in this picture. Later we will undoubtedly take an active part in the development of such appliances. In the meantime I trust that you will look upon our institution as your own, for actually, it is one that is constantly involved in the solution of your appliance problems. With this thought in mind, I am asking and hoping that our institution may receive not only from your association, but from each and every member of it, the most hearty and unqualified support.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended April 30 totaled 998,000 bbls., a daily average of 142,571 bbls., compared with 949,000 bbls., a daily average of 135,571 bbls., for the week ended April 23 and a daily average of 154,393 bbls. for the four weeks ended April 30.

At Atlantic Coast Ports—	
Baltimore	67,000
Boston	70,000
New York	525,000
Philadelphia	49,000
Others	91,000
Total	802,000
Daily average	114,571
At Gulf Coast Ports—	
Galveston district	118,000
New Orleans and Baton Rouge	178,000
Port Arthur and Sabine district	.....
Tampa	.....
Total	196,000
Daily average	28,000
At All United States Ports—	
Total	998,000
Daily average	142,571
Daily average four weeks ended	154,393

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended April 30 totaled 866,000 bbls., a daily average of 123,714 bbls., against 918,000 bbls., a daily average of 131,143 bbls., for the week ended April 23 and a daily average of 91,643 bbls. for the four weeks ended April 30.

At Atlantic Coast Ports—	
Baltimore	80,000
Boston	131,000
New York	353,000
Philadelphia	81,000
Others	221,000
Total	866,000
Daily average	123,714
At Gulf Coast Ports—None.	
Total Atlantic and Gulf Coast Ports	866,000
Daily average	123,714
Daily average four weeks ended	91,643
Distribution of total California oil receipts is as follows:	
Crude	296,000
Gasoline	298,000
Gas oil	.....
Fuel oil	272,000
Lubricating	.....
Total	866,000

OIL FROM NEW BRUNSWICK

The shipment of oil from the wells of Albany County, New Brunswick, to the Imperial Oil Co. Halifax refineries totaled 13,500 bbls. from December 1 to February 28.

KENTUCKY-TENNESSEE

(Continued from Page 60)

ing 100 bbls. daily from it, on account of the price of crude, but continue pumping it to keep the hole in shape. This is one of the good producing properties in the south central portion of Kentucky. There are now six producing wells and one dry hole on the lease. Others will be drilled in and only a portion of their output will be tanked, and none of them pumped off yet. Same parties are drilling a test on the Long & Moore farm, on Pulsey Creek, in Cumberland County. In No. 7 well, on the Pierce Brothers farm, a string of 235 feet of casing was set. Top of sand found at 449 feet and drilled to a total depth of 535 feet where the big pay was found.

In the Sulphur Creek district of Cumberland County, the Southern Producing & Refining Co.'s No. 12, on the A. A. Huddleston farm, struck a nice gas sand at from 648 to 650 feet and drilling deeper found the top of another sand at 749 feet and bottom of this sand at 788 feet, which means 39 feet of sand and drilled to a total depth of 802 feet, making a 14-foot pocket, the well doing 15 bbls. initial production.

Good Blue Sand Well

Much excitement prevails in the Glasgow Field of Barren County, over the find of a Blue sand well on the Loden farm, in the Lecta Pool, some 3 miles or so southeast of Glasgow made by the Samson Oil Co., and Winn Davis, that produced better than 100 bbls. the first 24 hours. Wells of this capacity in this sand are a surprise and mean that the best producing area of that sand is now centered in the Lecta Pool. The well is such that near-by leaseowners are getting busy and starting new holes in hopes of finding a rich well like the Loden. No. 2, on the Walter Browning farm, in the same pool, is in the same sand and reported showing for around 50 bbls. or better, while J. D. White and others' No. 2 Nichols farm is showing for 40 bbls. or more from the same sand. In the Hall-Baker Pool, in the same county, A. W. Ziegker and others' No. 9, on the Darter farm, is said to make something like 50 bbls. or more. Several other wells are nearing pay sand in Barren County.

Ohio County

As an indication of the outside interest in Ohio, Daviess and Hancock Counties, new men are coming into the field daily scouting for leases, but find the sledding hard, as for the past several months these counties have been honeycombed by lease scouts for the large producing concerns and any territory that looked inviting has been taken under lease. Among the late visitors to the field, was W. T. Clarke, of Lexington, one of the head officials of the Eastern Gulf Oil Co., who is looking over the field. This company has no acreage, in the field but will doubtless be in the market if his inspection is satisfactory.

Frank B. Russell, oil operator of Louisville, has secured some acreage from the Pampas Oil Co., and is setting a rig on the J. B. Dodson farm, 3 miles southwest of the Ambrose Pool, northwest of the Barnett Creek Church and something like 3 miles directly east from the Mount Carmel Church. It is purely a wildcat and should a commercial well be found it would widen out the Ambrose Pool at least 3 miles to the southwest.

In the Ambrose Pool, the Rex-Pyramid Oil Co.'s No. 5 well, 125 feet from the south line and 450 feet from the west line of the Scott Ambrose 52-acre farm, set casing at 555 feet, sand from 566 to 630 feet and went to a total depth of 642 feet and shot with 160 quarts, brought forth an initial 24-hour production of 125 bbls. No. 6 well, 125 feet from the south line and 200 feet from the west line of the same farm, set a string of 575 feet of casing, got top of sand at 596 feet and bottom at 650 feet and then drilled 12 feet deeper to a total depth of 662 feet and shot with 160 quarts, the initial production being 125 bbls. In the same pool, the same company hit a dry hole in the southeast corner of the Lake-Ambrose farm, in both the Jett and Barlow sands, at 880 feet.

D. T. Bolling and others' test, in the center of the A. and T. Dickens 160 acres, about 4 miles south of Whitesville, north of the Panther Creek Church a mile or so, and around 2 miles directly west from the Midkiff Pool, put in a string of 516 feet of casing, found sand from 579 to 592 feet, went to total depth of 618 feet and shot with 40 quarts, had an initial of 15 bbls. This is purely a wildcat and widens the producing area to the west of the Midkiff Pool.

Southwest of the Weller farm and in the Ambrose Pool, Kee and Engle's second well, 200 feet from the north line and 500 feet from the east line of the J. I. Bartlett 100 acres, set 637 feet of casing, got sand from 639 to 663 feet went to total depth of 667 feet and shot with 60 quarts, was a 16-bbl. initial producer. In the same pool, James C. Ellis is due in with Nos. 11, 12 and 13 on the J. R. Weller 110 acres. Miller and Dameron are drilling No. 1 on the A. J. Early farm, as well as No. 1 on the Fannie Lake farm, both in close proximity to production in the Ambrose Pool.

Clarence A. Leeper and others are drilling a wildcat for the Spice Dome Oil Co. in the eastern part of Ohio County and will test out sands deeper than the Barlow sand, unless a good producer is encountered in either the Jett or Barlow formations. Operators in general are looking for a deeper pay sand to be found than the present producing sands.

The Wood Oil Co.'s second well, on the Mary J. Elmore 100 acres, adjoining the Ambrose leases, is in the sand and showing for a commercial producer.

Allen County

In the Scottsville Field of Allen County, the Superior Oil Corp.'s No. 18 Angeline McReynolds farm, Section 84, set 150 feet of casing and after going to a total depth of 305 feet, was shot with 20 quarts, getting a 5-bbl. pumper.

The M. H. & S. Oil Co.'s No. 7 Cora Oliver farm, Section 55, set 150 feet of casing and went to a total depth of 350 feet and was dry.

Lee Moore's No. 8 Lee Moore No. 2 farm, struck only a 1-bbl. pumper at a depth of 357 feet.

Warren County

In the Bowling Green Field of Warren County, the Wood Oil Co.'s No. 32 well, 1,600 feet from the north line and 1,000 feet from the west line of the C. G. Davenport 222 acres, west of Bowling Green, pumped 10 bbls. from the shallow sand at 455 feet.

Joe Hobson's No. 2, on his own farm, proved a dry hole.

EASTERN FIELDS

(Continued from Page 58)

ship, Marshall County, E T. Wood has shut down at his test on the Edward Newman farm. In Fairmont district, Marion County, the Owens Bottle & Machine Co. has started to drill on the Wise farm. In Harper district, Roane County, the John Hamilton Oil Co. is drilling on the S. M. Curry farm. In Ten Mile district, Harrison County, the Aizpurin Oil Co. has the rig completed for a second test on the Patrick F. Dolan farm.

In Scott district, Putnam County, Dalton & Franklin completed their rig and started drilling No. 1 on the J. W. Gibson.

In Lee district, Calhoun County, the Ohio Fuel Oil Co. has a rig up for a test on the J. L. Stump farm. In Sherman district, W. H. Bickel has a rig up on the G. W. Hardman farm. In the town of West Milton Union district, Harrison County, Benjamin Holman has the rig completed on the Emma Holden lot.

Lincoln County

In Duval district, Lincoln County, the Cameron Oil Co. has a rig up on the Melinda Meadows farm. In Carroll dis-

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trict, Lockwood & Burns are due in the sand on the Preston Bird farm. In Sheridan district, the West Side Gas Co. has started to drill on the Delbert Shelton farm. In the same district, the Cambridge Gas Co. is rigging up on the J. H. Lucas farm.

Southwest Pennsylvania

In Richhill Township, Greene County, John Bair has completed a second test on the John Bair farm, a gasser in the Gordon sand. In Greene Township, the Philadelphia Gas Co. has a gasser in the Elizabeth sand at a test on the Frank Henderson farm. In Center district, Greene County, the Manufacturers Light & Heat Co. completed its No. 1 Crouse heirs to the Gordon and it is dry.

CENTRAL WEST FIELDS

(Continued from Page 58)

farm, in the northwest of Section 8, Barton Township. A fair indication of oil was found in a sand at 1,442 feet. It was drilled to a total depth of 1,485 feet, then plugged back to the depth of the showing and produced 7 bbls. the first 24 hours.

Two light pumpers were recorded in Veale Township, Daviess County, both being owned by Cavinal and others, No. 1 being 500 feet from the south and east lines of the Allison farm, Section 26, with an initial of 5 bbls. Top of sand was at 1,076 feet and drilled 5 feet into the sand. Same parties' No. 2, in Section 35, 500 feet from the north line and 750 feet from the east line, had a production of 5 bbls.

Illinois

Only one well was reported from Illinois, the Mount Vernon Development Co.'s No. 1, located 1,020 feet from the north line and 25 feet from the west line of the John Knohloff farm, in the northwest quarter of Section 6, Brookside Township, Clinton County, which was a dry hole at 1,406 feet.

In Centralia Township, Marion County, the Webster Drilling Co.'s second test on the Fee Webster farm, Section 30, was abandoned. This lease was purchased from Jesse George for the purpose of supplying material for several other wells.

Three wildcat wells are being started in the eastern portion of Clark County. In Melrose Township, the Arkansas Oil Co. is drilling a test on the Edward Alexander farm, Section 9, at the north edge of the township.

In Darwin Township, unknown parties are making ready to start a wildcat on the Martin Wernz farm, while in York Township, same county, unknown parties are working at a test on the Balzaar Bubeck farm.

Central Ohio

Development work is quiet in the Central Ohio Field at this time and few completions are reported. In Chatham Township, Medina County, the E. R. Edson & Son Co.'s No. 18 well, near the southeast corner of the W. P. Wertz farm, Lot 5, Section 14, pumped 4 bbls. initial at a depth of 410 feet.

The East Ohio Gas Co. landed another nice producer at its No. 5 in the northeast corner of the Jacob Uhl 100 acres, Lot 23, which had an initial production of 125 bbls. from the deep Clinton sand.

The Ohio Oil Co.'s No. 1 on the Adam Markley farm, Section 1, Monroe Township, Coshocton County, is reported to be a dry hole.

MOTORS DISPLACE JINRIKISHAS

The increase in automobiles in Japan has stimulated interest in good roads development, and also has caused a decrease in the use of the jinrikisha and the coolie-drawn cart, according to Consul Henry B. Hitchcock, at Nagasaki.

INDIANA ORDERS TANKER

The Standard Oil Co. of Indiana has ordered a tanker, 390 feet in length, with a beam 52 feet and 25 feet deep from the Lorain yard of the American Shipbuilding Co. The tanker will have a capacity of 2,000,000 gallons of oil.

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MICHIGAN FIELDS

(Continued from Page 60)

feet and drilled 16 feet in is reported showing for 20 bbls.

Nearing Completion

There are quite a number of wells nearing the sand and the next week or so should show a nice increase in the daily output of the field. Among those close to the sand wells are Fordney Petroleum Co.'s No. 1 between Davenport Street and Genesee Avenue; No. 1 on the W. J. Mason property, on the southwest corner of Clark and Hanchett Streets; No. 1 on Davenport Street, all by the same company; the Sun Oil Co.'s No. 1 Kuck farm, Section 10, Saginaw Township; No. 2 Voight farm, same section; J & S. Development Co.'s No. 1 on Fayette Street, south of Clark Street; same company's No. 1 on the south side of Clark Street, at Eddy Street.

Hickey Oil Co.'s No. 1, at Clark Street and Michigan Avenue, is also due for completion Elliott & Miner's well, near Cronk and Stone Streets, is another nearing the sand. Sun Oil Co.'s No. 3 Dr. D. E. Bradshaw farm, Section 10, Saginaw Township, is nearing the Saginaw sand, but has experienced some trouble which delayed its completion. On the east side of the Saginaw River, the Schwinck Oil Co.'s No. 1 at the foot of Tuscola Street, is also close to the sand.

The fishing job of the Superior Oil Co. on the Albert E. Pelkey property on Reed Street, has been cleared up and should reach the pay within a few days, while its No. 1 on the Albert Heyse property at Ash and Stone Streets is also close to completion.

Field Notes

The Sun Pipe Line Co. has completed its two 2,000-bbl. storage tanks at its loading rack along the Pere Marquette Railroad.

The Sun Oil Co. has put its Saginaw sand well on the Ferdinand Stelzreide farm, in the north end of the field, on the pump and is reported putting 40 bbls. a day in tanks, which is slightly larger production than the well would flow. This was the well that some weeks ago started off at around 475 bbls.

Numerous new derricks are springing up in all parts of the field and it looks like a busy summer season for Saginaw, now that the field is assured of a refinery and ready market for the oil.

The Western Drilling Oil Corp.'s Saginaw sand well at Oak and Eddy Streets, is reported putting out oil at the rate of 50 bbls. a day and is considerably over a mile southeast of the Saginaw sand well of the Sun Oil Co. on the Stelzreide lease. The Saginaw Prospecting Co.'s well on the Greibel property, midway between the two producing Saginaw sands, was drilled to the Saginaw sand but failed to make a showing and it is being plugged back to the Berea sand, where it will make a commercial producer.

The Flint Oil & Gas Co. is starting a well on the William C. Knuttel, Edward A. Bennett and other properties, a community lease at the southeast corner of Fayette and State Streets. This company plans drilling several wells.

R. L. Hill and others have started operations at a test southeast of the hamlet of Birch Run, southeast of Saginaw.

Saginaw Prospecting Co. is erecting a derrick on a community lease on the north side of the Shattuck road a short distance west of Hermansau road.

The Fordney Petroleum Co. is starting a well on the Mrs Honora Knight property on the northwest corner of Oak and Carrollton Streets, and also on the Fred A. Gardner property on the west side of North Michigan Avenue between Genesee Avenue and State Street.

Wayco Oil Producing Co. is starting No. 2 on the Braun property north of Weiss Street and east of Eddy Street.

The Sun Oil Co. has a rig up for No. 4 on the John Stelzreide farm, Section 11, Saginaw Township.

The Ohio Oil Co. is drilling No. 4 on the Mershon Eddy-Parker property in the heart of the pool.

SOUTHWEST WILDCATS

(Continued from Page 42)

Nixon at 1,365 feet, with the top of the chalk at 1,310 feet.

In the Laredo district the only abandonment was the Humble Oil & Refining Co.'s No. 5 Kohler, in Survey 395, at 3,009 feet, dry. It is several miles north of the Cole gas field.

New Locations

Seven new wildcat locations were made in Southwest Texas the past week in as many different counties. They are:

Webb County: B. L. Kay's No. 1 N. H. Brown, 22 miles southwest of Catarina, to start drilling by June 25.

San Saba County: B. C. Graves' No. 1 Shaw in Survey 68, located 2,000 feet from the north line and 1,500 feet from the east line.

Williamson County: Watercress Oil Co.'s No. 1 Fowler, 6 miles west of Georgetown on the D. D. Fowler farm.

Jackson County: Houston Gulf Gas Co.'s No. 1 White, in center of east 20 acres of White tract and in gas field west of Edna.

Lee County: Bowers and others' No. 1 Brenbaun, 2 miles east of Monheim and 200 feet from the north and west lines of the farm.

DeWitt County: Eduoard Raymond's No. 1 Boldt, a few miles southwest of Cuero.

Brewster County: Green Valley Oil Corp., 2 miles southwest of the company's No. 1 Wilson.

Duval County

Schlessinger Oil Co.'s No. 2 Hahl, Survey 60, is location at 330 feet to north line and 1,650 feet to east line. National Oil Co.'s No. 1 Ball, Ball ranch, Survey 16, located 450 feet to north line and 150 feet to east line, has derrick timbers on ground and is moving in machinery. Humble Oil & Refining Co.'s No. 12 Singer, Survey 4, located 2,600 feet to north line and 2,000 feet to west lines, is drilling in hard shale and lime at 2,956 feet. Humble-Reiter-Foster's No. 5 Kohler, Survey 395, located 1,080 feet to east line and 530 feet to south line, is drilling at 2,920 feet; No. 6 Kohler, Survey 400, is new location and is located 60 feet to west line and 600 feet to south line Humble Oil & Refining Co.'s No. 2 Welder-Woods, Survey 102, located 5,280 feet to south line and 4,500 feet to east line, is in sandy shale at 1,458 feet. Dixie Oil-Southern Crude's No. 1 Gray, Survey 316, 330 feet to NE cor., is coring at 1,000 feet.

Jim Hogg County

Holden and others' No. 3 Jones, Share 27, Block 136, located 330 feet to east line and 440 feet to north line, is drilling at 1,460 feet. Harry Hamilton and others' No. 1 Holbein, Block 44, Hamilton Subdivision, 158 feet to south line and 363 feet to west line, is standing at 1,400 feet.

Webb County

Killam-Maddox's No. 1 Bruni, Survey 4, Block 5, located 150 feet to northeast and southeast lines, is drilling at 600 feet. O. W. Killam's No. 1 Billings, SE NW Survey 43, located 150 feet to south lines and 750 feet to west lines, is drilling at 2,932 feet.

Starr County

Commonwealth Oil Co.'s No. 1 Garcia, Survey 538, located 2,722 feet to south line at 2,102 feet to west lines, is drilling at 1,080 feet. Southern Exploration Co's No. 2 Russel, Porcion 69, Share 173-B, located 150 feet to north line and 950 feet to west line, is rigging up. Milham Corp.'s No. 2 Salinas, Porcion 111, 11,360 varas to west line and 800 varas to north line, is drilling at 3,502 feet.

Zapata County

Roxana Petroleum Corp.'s No. 1 E. Lopez is location in Survey 288. J. H. Winch's No. 1 Bustamente, Share 10, Block 8, located 150 feet to northeast and southeast lines, is rigged up and laying water line.

Bexar County

Associated Petroleum Co.'s No. 15 Caruthers is location in Caruthers Survey, 604 feet north of No. 13; No. 2 Ernest, Survey 266, is location 550 feet west of No. 1. A. R. Beal, trustee's, No. 1-A

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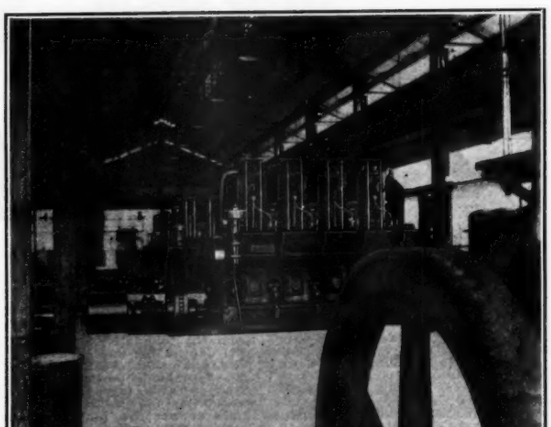

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Ackerman, Survey 133½, is drilling at 370 feet with small oil showing at 310 feet.

Bastrop County

The Texas Company's No. 1 Goettz, Survey 349, located 200 feet to west line and 150 feet to south line, is drilling below 1,000 feet.

Bee County

D. Hewitt is rigging up on the G. A. Ray lease for No. 1 Ray. W. S. Pool's No. 1 J. C. Wood is location 5 miles southeast of Beeville. Nichols & White's No. 1 Hicks, Hicks-Hall Survey, Block 19, NW cor., is drilling at 1,200 feet.

Brooks County

The Texas Company's No. 1 Laster, Survey 329, located 1,250 feet to north line and 1,100 feet to east line, is moving in timbers for derrick.

Brewster County

Van McPhail's No. 1 McIntyre, Survey 59, Block 352, located 150 feet to SE cor., is moving in rig.

Caldwell County

Sun Oil Co.'s No. 1 Martindale, Dial Survey, 3,988 feet to west line and 1,643 feet to north line, topped Edwards at 1,525 feet and has been abandoned at 1,728 feet dry both as to water and oil. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, is drilling at 2,500 feet after sidetracking tools at 1,200 feet and is in old hole.

Lou Gould Sheddan's No. 1 W. F. Davis, Salt Flats, is coring at 1,750 feet with oil showing at 1,200 feet. Fred Adams' No. 1 Walter Ellison, near Seawillow, at 2,573 feet has been abandoned a failure. Sutton & Smith's No. 2 Carter, G. Hinde, at 2,601 feet is to be drilled deeper.

Comanche County

Mid-Kansas Oil & Gas Co.'s No. 1 Waldrop, William De Moss Survey, at 1,184 feet to west line and 250 feet to south line, is moving in machinery. Texas Pacific Coal & Oil Co.'s No. 1 Ward, Survey 15, is new location 2,420 feet to west line and 985 feet to south line.

DeWitt County

G. O. Williams and O. L. Gates' No. 1 Oscar Gohmert, Brooks League, 175 feet to north line and 300 feet to east line, is moving in machinery. McNeil & Matthews' No. 1 Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is drilling at 2,300 feet.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, located 700 feet to north line and 2,000 feet to east line, is drilling in Navarro at 2,325 feet.

Frio County

P. A. Neilan's No. 1 Blackaller, James Gouley Survey, is fishing for drill stem at 3,005 feet.

Fayette County

La Fayette Oil Co.'s No. 1 Marquardt, Phillips Survey, 976 feet to northwest lines and 400 feet to southwest lines, is shut down for repairs in Yegua formation.

Goliad County

Houston Oil Co.'s No. 3 Pettus, 10 miles west of Goliad, is reaming at 3,560 feet; No. 2 Parks, 8 miles east of Goliad, is fishing at 3,747 feet.

Guadalupe County

Pat Armstrong's No. 1 Dale, topped chalk at 1,652 feet and shut down. F. A. Lain's No. 1 Weinert, W. K. Estell Survey, at 150 feet to CNL, is drilling in sandy shale at 1,645 feet.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, completed rigging up at 1,120 feet and has set casing to shut off water in preparation to making a test.

Karnes County

Alamo Drilling & Leasing Co.'s No. 1 Szalwinski, Manchasa Survey, 500 feet to northeast lines and 200 feet to southeast lines, is reaming to set casing at 1,803 feet to test 20 feet of oil sand.

Kerr County

Walker-Van Duyn's No. 1 Leigh, Survey 38, located 500 feet north of river and 150 feet south of railroad, has sidetracked and resumed drilling at 2,250 feet.

Kinney County

W. A. Stephens and others' No. 1 Jim Clamp, Survey 346, at 5,362 feet to west line and 5,674 feet to south line, is drilling at 550 feet. Havelin Oil Co.'s No. 1 well, 18 miles from Del Rio, is shut down at 4,315 feet in sandy lime, reported to have oil showings.

Lavaca County

Steinman Brothers' No. 1 Steinman (fee), 4 miles southeast of Yoakum, is drilling at 2,870 feet.

Live Oak County

Stovall & Kelly's No. 1 Stewart, William J. Cannon Survey, 200 feet west of Nueces River, is preparing to drill. Warren Wood Hunt's No. 1 McNeil, Jane Curry Survey, 4,000 feet to NE cor., is spudded in. Houston Oil Co.'s No. 17 Cartwright, Cannon Survey, 1,500 feet southwest of No. 1 Riverbed, is drilling at 2,300 feet; No. 1 Dunning has set casing at 2,055 feet; No. 3 Sellars is new location in Muellin Survey, 700 feet south of north line. Henderson Coquat's No. 5 Sartain, Simms tract, has hole clean at 1,297 feet and drilling deeper. J. W. Walton's No. 1 Roberts, west of Three Rivers, is showing both gas and oil at 1,837 feet and will set casing and test.

Medina County

Schermerhorn Oil Co's No. 5 Medina Valley, Block 3, Degent Survey No. 31, is new location 2,500 feet north of No. 1. Empire Southern Oil Co.'s No. 1 Allen has derrick up. Witherspoon Oil Co.'s No. 2 Redus, Survey 92, tested salt water at 1,122 feet and has plugged back; No. 1 Nixon, Survey 119, located 1,500 feet to east line and 1,600 feet to south line, topped chalk at 1,310 feet, and is drilling at 1,365 feet. R. P. O'Brien's No. 1 Nixon, Survey 531, SE cor., is drilling at 938 feet. Fennell & Williams' No. 2 John Fohn, Survey 115, east 100 acres, at 1,465 feet is 20 feet in Eagle Ford shale. Medina Oil Co.'s No. 1 Taylor, Survey 135, pulled casing at 356 feet and will deepen to Pennsylvania; No. 12 Taylor, Survey 135, is new location. J. H. Gray and others' No. 1 Mann, Survey 16, located 350 feet to SE cor., is shut down at 1,158 feet. Ina Oil Co.'s No. 2 Fingers, Survey 746, Lot 5, located 1,525 feet to north line and 2,794 feet to west line, is fishing at 1,580 feet for three joints of drill stem. Whelless & Peter's No. 1 Berger, Survey 341, is shut down at 1,315 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center, is shut down at 820 feet to wait for cement to set. Johnstone & Hout's No. 1 Whipff is milling up casing shoe at 1,210 feet. Rycade Oil Corp.'s No. 1 Chittim is still fishing at 5,590 feet and making 29,000,000 feet of gas and 75 bbls. of high-gravity oil daily; No. 2 Sullivan is reaming to set casing at 3,832 feet. Hume-Lindenborne's No. 1 Hanchin, Survey 44, Block 16, center, has been spudded in and is drilling below 200 feet.

McMullen County

E. R. Mart's No. 8 Poitevent, Survey 56, is location 1,250 feet to south line and 150 feet to southwest lines. R. L. Taylor's No. 1 Shiner, Survey 8, located 150 feet to NE cor., is drilling at 450 feet; No. 2 Shiner, Survey 14, is location 150 feet to SW cor., with drilling to start within 30 days of the completion of No. 1. Nelson & Wood's No. 1 Shiner, Block 47, Survey 48, located 1,000 varas to east line and 350 varas to south line, has resumed drilling at 783 feet. George B. Pickett's No. 1 Jacob, Survey 7, located 660 feet south of north line, is drilling in sand, lime and pyrites at 2,297 feet. Dodson and others' No. 1 Franklin, SW Survey 31, is shut down at 1,100 feet. Houston Gulf Gas Co.'s No. 5 Jacobs, Rees Survey, 600 feet to north line and 2,500 feet to west line, is standing at 904 feet. George M. Ball's No. 1 Fuykendall, Block 7, located 300 feet to south line and 600 feet to east line, is shut down at 1,390 feet.

San Patricio County

F. S. Smiley's No. 1 T. E. Wilson, one-fourth mile northwest of Angelita, has derrick blown down. Huber & Crawford's No. 1 Mathis, Delgavo Survey, Block 17, located 300 feet to northwest lines and 2,500 feet to southwest lines,

is shut down at 2,275 feet. John Sigmund's No. 7 McCampbell is drilling at 4,600 feet.

San Saba County

C. J. Williamson and others' No. 1 Wiliamson, McCarty lease, near Milburn will spud in May 12. George W. Pennington and others' No. 1 Blackard, Section 333, located 900 feet to NW cor., is drilling. Wilmot Oil Co.'s No. 2 Rocky Pastures, located 50 feet from No. 1 and 9 miles northeast of San Saba, is drilling below 900 feet.

Victoria County

R. M. Talbott's No. 1 J. K. Reeves estate, located 2,000 feet to west line of J. K. Reeves estate, is drilling at 750 feet.

LA.-ARK. WILDCATS

(Continued from Page 53)

Corp. has a rig up for No. 2 Logan, Section 28-10-12, and also for No. 6 Logan and No. 7 Logan, Section 33-10-12. Louisiana Oil & Refining Corp. has started operations at No. 1 Logan, Section 28, and has set 10-inch casing at 205 feet. Lewis Clark Petroleum Co. is reaming at 3,810 feet in No. 1 Wyatt, Section 23-5-12. Magnolia Petroleum Co. is drilling in gumbo in No. 1 Hall, Section 33-10-12, with the total depth at 920 feet. The same company also has a location for No. 1 Louisiana L. L. L. Co., Section 2-6-11. C. W. Robinson and associates have a derrick completed for No. 1 Hamlin, Section 6-9-13. Woodley Petroleum Co. is drilling in chalk rock at 1,930 feet in No. 1 Robinson, Section 33-10-12.

Winn Parish

Humble Oil & Refining Co. has a drill stem stuck in No. 21 L. & A., Section 28-10-2w, at a depth of 1,460 feet. The same company also has made a location for No. 22-A L. & A., Section 33. J. C. Long is coring at 1,570 feet in No. 1 Milam, Section 28-13-3w. Ohio Oil Co. is drilling at 856 feet in No. 1 McCarty, Section 5-12-1w. Standard Oil Co.'s No. 1 Tremont, Section 1-12-2w, is in hard lime at 3,888 feet.

ARKANSAS

Union County

Garrett Modisette Drilling Co. has cemented 6⅝-inch casing at 3,817 feet in No. 1 Union Saw Mill Co., Section 7-18-13. Total depth of the hole is 3,821 feet. Lion Oil & Refining Co. has started drilling No. 1 Murphy Land Co., Section 23-18-18. The hole is at 100 feet. Lyell and associates have cemented 12½-inch casing at 47 feet in No. 1 Stegall, Section 11-17-13. Marine Oil Co. is arranging to abandon No. A-2 Thompson, Section 10-18-13. It is at a total depth of 2,684 feet but tested salt water at 2,664 feet. The same company has milled casing at 2,600 feet in No. 1 B-1 Wynn Estate, Section 10-18-13. It cored a sand at 2,677-87 feet and a short string of 5⅞-inch casing has been cemented at 2,686 feet. Ohio Co. has cleaned out No. 1 Cain, Section 1-17-14, but is shut down for fuel. This test is at 3,014 feet Rice and assicates have a rig up for No. 1 Newton, Section 13-17-16. Rovenger Oil Corp. is to deepen No. 1 McCain, Section 4-17-14. It tested salt water at 2,748 feet but the hole has been plugged back to 2,732 to shut off the water. Simms Oil Co.'s No. 1 Crawford, Section 14-18-13, tested salt water in sand at 2,638-11 feet. Sun Oil Co.'s No. 1 Thompson, Section 10-18-13, is drilling at 2,250 feet. Sunny Jim Oil Co.'s No. 4 Flenniken, Section 5-18-13, is drilling at 2,592 feet. Vaughan and associates' No. 1 Ezzell, Section 12-17-15, is drilling at 1,215 feet.

Ouachita County

Humble Oil & Refining Co. has abandoned at 1,400 feet No. 1 Lancaster, Section 15-14-19.

Bradley County

Arkansas Fuel Oil Co. has abandoned as dry at 3,134 feet, No. 1 Arkansas Timber Co., Section 25-16-12. Johnson & Adams are drilling at 2,160 feet in No. 1 Southern Timber Co., Section 12-12-12.

Columbia County

Atlantic Oil Producing Co. has a derrick up for No. 1 Couch, Section 23-17-20. Mitchell & Isles are drilling in shale at 1,900 feet in No. 2 Bodcau, Section 4-20-21.

Arkansas Natural Gas Co. has started operations at No. 1 Goodlet, Section 34-10-26. It drilled out a 10-inch plug cemented at 125 feet and has reached a total depth of 639 feet.

Clark County

Whelen Oil Co.'s No. 1 Burrow, Section 35-10-20, is drilling at 1,910 feet.

Miller County

Lenz and associates' No. 2 Dale, Section 28-15-26, has been shut down at 2,780 feet.

GULF COAST FIELDS

(Continued from Page 44)

Mecom Oil Co.'s No. 2 Taylor is side-tracking at 3,470 feet. The Empire Gas & Fuel Co.'s No. 25 Barngrover is drilling around 1,800 feet. A location has been made for The Texas-Vacuum Oil Co.'s No. 7 Hannah. The Gulf Production Co.'s No. 20 Baldwin is rigging and No. 86 Phoenix is around 2,235 feet. The Republic Production Co.'s No. 33 and No. 98 Dolbear are working over.

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 56 Smith is drilling around 4,235 feet and No. 71 is at 435 feet. No. 10 Beaumont is around 3,065 feet. Gulf Production Co.'s No. 24-A Wright is drilling at 2,655 feet. The Gulf Coast Oil Co.'s No. 35 Galliard is at 1,655 feet. The M. & B. Oil Co.'s No. 6 Scorrgea is drilling around 2,575 feet. Wilson and others' No. 7 Busch is at 1,800 feet, sidetracking.

In the Boling Pool in Wharton County, The Texas Company's No. 4 Felder is below 650 feet. Gulf company's No. 4 Chase is about 1,235 feet. The Atlantic Oil Producing Co. started No. 1 Harrison. Weed & Gayle are drilling No. 2 Bey in the shallow sand section on the dome.

Well at Orchard

The Gulf Production Co.'s No. 10 Moore at Orchard, northwest of Rosenburg, Fort Bend County, came in Wednesday flowing 2,300 bbls. initially at 3,650 feet. Late in the week the well had sanded and is being worked over. The Orchard Dome was opened in January 1926, by the Gulf Production Co. with its No. 5 Moore, which came in flowing 2,000 bbls. initial at 3,750 feet, 34 gravity oil It was on the east flank. The Gulf company holds some 8,000 acres, which covers the prospective territory. Since that time one more light producer and three dry holes have been drilled. The dome was discovered in 1924 by geophysical exploration.

The Texas Company abandoned No. 3 La Jarza, its deep test on the east side of the old Batson Pool, after drilling to below 5,000 feet.

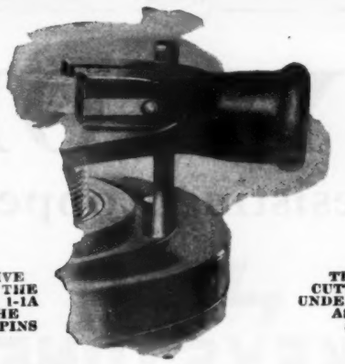
Deep Wildcat Abandoned

The Roxana Petroleum Corp. quit No. 3 Allen, off the new Allen Dome in the southwestern part of Brazoria County on the San Bernard River, at 5,835 feet. It was one of the deepest wildcat tests in the history of the Gulf Coast. Same company quit No. 1 Poole at 835 feet.

Edmund Tstee, trustee, abandoned No. 1, northwest of Port Arthur, at 3,530 feet.

Two wildcats were abandoned in South Louisiana. The Union Sulphur Co. quit No. 1 Little at Hackberry Island Dome in Cameron Parish at 1,340 feet and the Rycade Petroleum Corp. abandoned No. 1 Atchafalaya in St. Martin's Parish at 3,790 feet.

In the Markham Pool in Matagorda County, the Powers Production - Moody Oil Corp.'s joint No. 3 Myers was abandoned in gyp at 4,032 feet. This well showed salt water last week at 3,940 feet, the Halliburton method being used for the first time around a saline dome. The Rycade Petroleum Corp. abandoned No. 4 Kountz on the southwest flank in salt. It was topped at 3,907 feet and drilled into for 100 feet. The salt has been found as deep as 4,500 feet on the north flank. Deering and Houston-Gulf Gas Co.'s joint No. 3 Gray is bailing at 3,360 feet. Same interests' No. 4 Gray is drilling around 835 feet and Hamill



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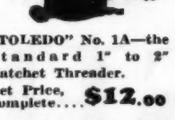

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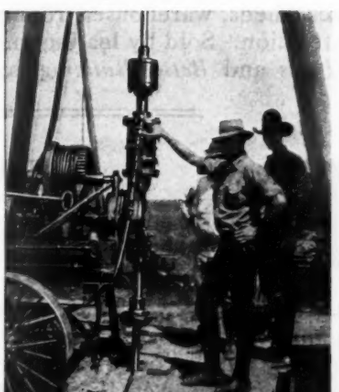

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and Houston Gulf Gas Co.'s joint No. 2 Sisk is drilling around 875 feet.

South Louisiana

Four wells were abandoned in the Jennings Pool during the week. They are: The Texas Company's No. 103 Latrielle at 2,100 feet; Mentau Oil Co.'s No. 2 Pierce at 1,500 feet; Port City Oil Co.'s No. 2 SFS at 3,000 feet and Bolyward Oil Co.'s No. 4 SFS at 1,975 feet.

In the Vinton Pool, The Texas Company's No. 18 Vincent is pumping 75 bbls. at 2,450 feet. The Vinton Petroleum Co.'s No. 13 Rescue is making 10 bbls. at 2,400 feet. The Gulf Refining Co. has started No. 42 Star.

In the Edgerly Pool, the Gulf Refining Co.'s No. 41 Bright-Penn is at 3,835 feet. The Crotty Oil Co.'s No 12 Lilliard is at 2,170 feet. The Rex Petroleum Co.'s Nos. 2 and 5 Hunter will be drilled deeper.

In the Lockport Pool, where the Vacuum Oil & Refining Co. are operating jointly, No. 2 Bordages is fishing. No. 3 Bayou d'Inde is drilling around 2,600 feet. No. 15 Miller is around 4,235 feet and No. 16 is below 4,150 feet, with a location for No. 17. No. 1 Farquhar is fishing and No. 2 is rigging. No. 5-A is at 4,400 feet. Locations have been made for Nos. 4 Friedberg & Wolf and 17 Miller.

In the Stark Pool, which has one well, the Gulf Refining Co.'s No. 5 Lutcher Moore is drilling around 4,300 feet and No. 1 Industrial Lumber Co. is at 3,140 feet.

Coastal Texas

Angelina County — Roxana Petroleum Corp.'s No. 7 Long Bell Lumber Co., drilling.

Austin County — Raccoon Bend district: The Humble Oil & Refining and Valley Oil Cos. have shut down all but two tests. No. 2 Reese is drilling about 2,435 feet and No. 1 Bellville School is at 2,965 feet. North of Bellville: Mewis and others' No. 1 is at 905 feet. Hickory Mound: R. E. Graves' No. 1 Glover is fishing at 980 feet.

Brazoria County—Allen Dome: Roxana Petroleum Corp.'s No. 1 San Bernard River is drilling below 5,200 feet. Clemens Dome: Roxana Petroleum Corp.'s No. 2-A Pabst is drilling at 5,045 feet. No. 1 Bell is rigging. No. 4 Clemens is at 4,506 feet. Stratton Ridge Dome: Gulf Production Co.'s No. 2 Perry is at 2,624 feet. Pure Oil-Humphreys Oil Corp.'s No. 1 Armstrong is drilling at 3,508 feet. The Associated Oil Co.'s No. 1 Sanburn is around 3,600 feet.

Fort Bend County—Long Point Dome: Gulf Production Co.'s No. 4 Beard is at 3,040 feet. No. 2 Wolfe is at 875 feet. No. 2 Trone, on the west flank, is at 1,100 feet. A location has been made for No. 25 Davis.

Chambers County—The Salt Dome Oil Co. is starting No. 1 Super in the H. Griffith Survey.

Harris County—Hockley Dome: Humble Oil & Refining Co.'s No. 1 Warren is at 1,800 feet. Atlantic Oil and Simms Oil joint No. 1 Burt & Griffith, 3 miles north of Humble, is at 3,996 feet. Dr. P. S. Griffith No. 2 fee, north of Houston, is at 3,213 feet. The Juniata Oil Co. has started No. 1 Kytsman, near Cypress.

Jefferson County — Fannette Dome: Gulf Production Co.'s No. 3 Bordages is drilling around 4,900 feet. Big Hill Dome: Houston Oil Co.'s No. 1 Fitzhugh is at 1,765 feet.

Montgomery County—Brain and others' No. 1 Fitch, northeast of Spring, is sidetracking drill stem in the hole at 1,700 feet.

Matagorda County — Hawkinsville Dome: Gulf Production Co.'s No. 3 Sanborn is drilling at 2,554 feet. No. 8 Craig is at 4,455 feet. No. 2 Parkinson is around 1,565 feet, with a location for No. 3.

Orange County—W. C. Wells' No. 2 Stark, Adams Bayou, is at 1,714 feet. Miller Drilling Co.'s No. 1 Brown, Gum Island, has spudded in.

Washington County — Pratt-Hewitt Co.'s No. 2 Koniecny is drilling around 2,545 feet. Schurenburgs and DeWare's tests are both shut down.

Houston County—Porter Oil Co.'s No. 4, near Crockett, is rigging.

Shelby County — Magnolia Petroleum Co.'s No. 1 Pickering Lumber Co. set surface casing. Clark & Melat's No. 1 Pickering is fishing at 2,800 feet. Arkansas Fuel Oil Co.'s No. 1 Bouland is drilling around 3,735 feet.

Goliad County—Houston Oil Co.'s No. 2 Parks, east of Goliad, is sidetracking drill stem at 1,335 feet. No. 3 Pettus, west of Goliad, is drilling at 3,608 feet.

Louisiana

Cameron Parish — Hackberry Dome: Yount Lee Oil Co.'s No. 4 State land is around 3,100 feet. No. 6 School land is at 5,065 feet. No. 10 Gulf is at 3,425 feet, showing oil. Border Research Co.'s No. 1 Mallard Bay and 1 Sabine Lake are both idle. Sweet Lake Dome: Pure Oil Co's No. 4 is idle at 300 feet. No. 5 is drilling at 2,000 feet.

Calcasieu Parish — Sulphur Dome: Union Sulphur Co.'s No. 720 fee is idle at 4,520 feet. Hintzse and others' No. 1 Binkenstein is at 4,300 feet. Border Research Co.'s No. 1 Calcasieu Lake is idle at 4,505 feet.

Iberia Parish — Eagle Point Dome: Gulf Refining Co.'s Nos. 1 Broussard and 2-Z State land are both shut down on account of high water. The Calcasieu Oil Co.'s No. 1-A Schwing is also shut down around 2,900 feet. Border Research Co.'s No. 1 Vermillion Bay is shut down at 1,200 feet.

Jeff Davis Parish—F. I. Getty's No. 1 LaCassine is idle at 3,515 feet. Estropal Oil Co.'s No. 1 Deux is at 2,915 feet.

Evangeline Parish—Pine Prairie Dome: The Texas Company's No. 1 Guillory is drilling around 4,800 feet.

OKLAHOMA FIELDS

(Continued from Page 49)

20-9. Sheridan Oil Co.'s No. 1 L. Master, NW cor. SW SE Section 17-20-10, is dry at 2,363 feet, having found water in the Burgess sand. Magnolia Petroleum Co.'s No. 4 S. M. Fugate, NE cor. SW Section 9-20 6, has a hole full of water in sand at 3,874-85 feet.

Tulsa County

Enfisco Oil Corp.'s No. 1 Unallotted, NE cor. Section 18-19-11, is spudding. O. N. West's No. 1-A Covey, CEL NW NE Section 11-18-12, is a 10-bbl. well in the Turkey Mountain sand at 2,086-2,118 feet.

Okfuskee County

Empire Gas & Fuel Co. has the rig up for No. 1 Grayson, NE cor. NW NE Section 30-11-10, to deepen.

The Texas Company's No. 2 Tiger, SE cor. NE SE Section 35-11-11, was completed for 4,000,000 feet of gas in the Deaner sand at 2,468-77 feet.

Okmulgee County

J. W. Roberts' No. 2 B. Carter, NE cor. SE, Section 10-15-14, an old well, is being cleaned out to deepen below 1,498 feet. Nicholson Corp.'s No. 1 Hawkins, C NW SW Section 13-11-13, is drilling at 350 feet.

Simons and others' No. 2 Pence, SE cor. NE SE NE Section 20-16-11, is dry and abandoned at 2,858 feet in the Wilcox sand. Sinclair Oil & Gas Co.'s No. 1 Escoe, NW cor. SW NE Section 22-16-11, is a dry hole at 3,372 feet in the Wilcox sand. B. Morgan's No. 1 Bird, SE cor. NE SW Section 8-12-12, is making 10 bbls. after it was shot with 120 quarts in sand at 1,520-38 feet. W. B. Reney's No. 4 Love, CEL NW NE Section 16-14-14, is producing 2,500,000 feet of gas from sand at 1,638-53 feet.

Hughes County

McCullough Oil Co.'s No. 1 Carolina, NE cor. NW SE Section 17-10-9, has a hole full of water at 4,260 feet and has been abandoned.

McIntosh County

John Aggas and others have the machine on the ground for No. 1 E. Perryman, NW cor. Section 11-12-15.

Muskogee County

E. Price's No. 5 Morris, CSL SW NW Section 29-15-15, is dry and abandoned at 1,562 feet. H. B. Middleton's No. 5 D. Smith, CEL SE NW Section 7-15-16, is a dry hole at 1,495 feet. K. Wasoff's No. 1 Robbins, C SE Section 34-15-16, has been abandoned at 1,937 feet. W. R. Sommerville's No. 3 Warrior, SW cor. NE NE Section 17-15-17, is a 50-bbl.

well in sand at 1,431-33 feet. C. M. Bradley's No. 1 Durant, CWL SW SE Section 10-15-18, an old well deepened, is dry at 1,897 feet. No. 4 Goodrich, NW cor. SW NW SW, Section 5-14-19, was completed for 50 bbls. in the Muskogee sand at 717-44 feet.

Wagoner County

Artue & Compton's No. 1 E. Scott, NE cor. SE NE Section 7-17-15, is dry and abandoned at 1,500 feet. Carder & Green's No. 1 Fitzgerald, NE cor. SW Section 5-18-16, is a dry hole at 1,000 feet. Hodges & Elliot's No. 1 Dryden, NE cor. SE SE Section 6-18-16, has been abandoned at 775 feet. D. R. Owens' No. 1 F. Barnett, C NE NW Section 9-18-16, was completed for 750,000 feet of gas in sands at 610-18 feet and 644-50 feet, the total depth being 1,185 feet. Individual Oil Corp.'s No. 1 Bilby, NW cor. SE Section 10-18-16, is dry and abandoned at 860 feet. C. W. Gillett's No. 2 Reynolds, SE cor. SW NW Section 7-16-15, is dry and abandoned at 2,328 feet.

Murray County

Galt-Brown Oil Co. is putting up the rig for No. 1 Davis, CEL W half SE NW Section 21-1-4.

Stephens County

Gant and others' No. 1-A Clark, SE cor. SW Section 25-1s-9w, an old well being deepened, is now drilling at 2,117 feet. Magnolia Petroleum is deepening No. 5 Johnson, SE cor. NE Section 24-1s-9w, which is drilling at 2,135 feet. Medlin and others' No. 1-A Taliaferro, SE cor. NE SW Section 27-1s-8w, is drilling at 150 feet.

Magnolia Petroleum Co.'s No. 9 D. Russell, SE cor. NE SE SE, Section 25-1s-9w, an old well deepened, is flowing 125 bbls. from sand at 2,152-85 feet. Westheimer & Daube abandoned the location for No. 1 Martin, NE cor. SE Section 11-1s-4w.

Caddo County

English Drilling Co. is rigging up rotary tools at No. 5 Abernathy, C SE SE Section 31-6-9w. Mason and others' No. 1 Jones, C W half NE Section 17-5-14w, is drilling at 165 feet.

English Drilling Co.'s No. 1 Day, SE cor. Section 32-6-9w, an old gas well, was deepened from 1,907 feet to 2,412 feet and flowed 30 bbls. Gorton Trust Co.'s No. 8 Wade, NW cor. NE SW Section 2-5-9w, is a 10-bbl. well at total depth of 2,430 feet.

Carter County

Schermerhorn Oil Co. and Roxana Petroleum Corp. are rigging up rotary on No. 1 Williams, NE cor. NW Section 11-2s-3w. Magnolia Petroleum Co.'s No. 12 Adams, NW cor. NE NE Section 12-2s-3w, is a rig.

Humble Oil & Refining Co.'s No. 12 Jordan, NE cor. NW SW Section 18-1s-3w, is dry and abandoned at 3,385 feet. No. 9 Jordan, SW cor. SE NW Section 19-1s-3w, is a dry hole at 3,347 feet.

Grady County

Commercial Development Co. is rigging up the rotary at No. 1 Gerard, NE cor. NW Section 30-6-6w. J. B. Nichols has the rig up for No. 3 Reed, SE cor. NW NW Section 25-5-8w. Hall & Briscoe's No. 3 Dryden, SW cor. NE SE Section 35-5-8w, is drilling at 750 feet. Carter Oil Co. is building the rig for No. 2 C. Kerans, SE cor. NE Section 21-3-5w.

Magnolia Petroleum Co.'s No. 2 Smith, SE cor. NE Section 35-5-8w, is making 16,000,000 feet of gas from sand at 2,385-94 feet. Little Nick Oil Co.'s No. 3 Farwell, SE cor. NE SE Section 26-5-8w, set the 8¼-inch casing at 2,150 feet, drilled to 2,366 feet and completed for 35,000,000 feet of gas. Oklahoma Natural Gas Co.'s No. 3 Sanford, SE cor. NE SW Section 23-5-8w, was completed for 25,000,000 feet of gas in sand at 2,002-2,297 feet. J. B. Nichols' No. 1-A Williams, NE cor. SW SW Section 11-4-8w, is good for 30,000,000 feet of gas at total depth of 2,425 feet. Carter Oil Co.'s No. 4 V. Miller, NW cor. SW SW Section 22-3-5w, swabbed 100 bbls. from sand at 1,753-77 feet. No. 3 C. Kerans, SE cor. NE SE Section 21-3-5w, is flowing 100 bbls. from sand at 1,660-72 feet. No. 2 C. Kerans, NW cor. NE SE Section 21-3-5w, is swabbing and flowing 687 bbls. from sand at 1,650-95 feet. Magnolia Petroleum Co.'s No. 1 Woods, NE cor. SW NE, Section 17-3-5w, is a gas well making 13,000,000 feet from sand at 2,016-25 feet. Carter Oil Co.'s No. 5 Walford, SW cor. SE Section 16-3-5w, is swabbing 135 bbls. from sand at 1,699-1,714 feet.

Texas County

Wilcox Oil & Gas Co.'s No. 1 Zea, SW cor. SE Section 28-3-13, is dry and abandoned at 4,005 feet. Garber & Pulse's No. 1 Allison, NW cor. SE SE Section 4-1-12, has been abandoned at 4,071 feet.

Oklahoma County

Cromwell Oil & Gas Co.'s No. 1 Thompson, SW cor. NE NE Section 15-12-3w, is rigging up.

Kingfisher County

Max Kelly's No. 1 Kelly, SW cor. SE SW, Section 16-19-5w, has been temporarily abandoned at total depth of 5,015 feet.

Logan County

T. B. Slick's No. 1 Signs, NW cor. SE Section 20-17-1e, is drilling at 1,992 feet.

Major County

Frantz & Slick's No. 1 Gray, C NW Section 36-21-11w, has been abandoned at 4,670 feet.

Canadian County

T. B. Slick and Franks' No. 1 Pazourek, C S half NE Section 29-13-5w, is dry and abandoned at 4,542 feet.

Garfield County

Sinclair Oil & Gas Co.'s No. 73 North Walker, NE cor. NW SE NE Section 13-22-4w, is producing 209 bbls. from sand at 2,845-57 feet. No. 29 Denker, NW cor. NE SW SW Section 13-22-4w, also in the Garber Pool, has been abandoned at 3,003 feet in the Tonkawa sand.

Kay County

Comar Oil Co.'s No. 1-A Buell, SW cor. NE Section 21-29-1w, in the North Braman Pool, is being rigged up to deepen from 1,921 feet. Marileen Oil Co. and Phillips Petroleum Co. are building the rig for No. 1 Payne, SW cor. Section 17-27-1w, in the Blackwell Field.

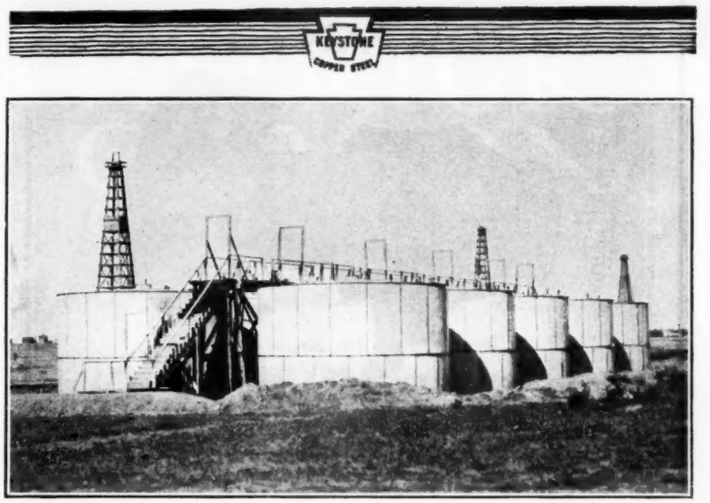
Comar Oil Co.'s No. 1-W McCormick, NW cor. SE Section 21-29-1w, North Braman Pool, was completed for 330 bbls. in sand at 3,318-58 feet. Oklahoma Northern Oil Co.'s No. 1 Lowery, NE cor. SW Section 11-28-1e, is dry and abandoned at 3,760 feet. Arkansas Fuel Oil Co.'s No. 3 Moore, SE cor. SW SW Section 3-27-1w, Blackwell Field, is making 15 bbls. from sand at 3,431-37 feet. Marland Oil Co.'s No. 1-A Gaylor, NE cor. SW Section 19-27-1w, is producing 15,000,000 feet of gas from sand at 3,510-11 feet. Wentz Oil Corp.'s No. 1-G Harris, C SE NW Section 31-27-2e, has been shut in for 4,500,000 feet of gas in the shallow sand at 608-616 feet. Marland Oil Co.'s No. 2 Thomas, SE cor. SW SW Section 15-25-2w, Thomas Pool, has been abandoned after being deepened to 4,046 feet. Carter Oil Co.'s No. 1 Sutton, C SW NE, Section 30-25-1w, west of the Tonkawa Pool, is dry and abandoned at 1,067 feet.

Noble County

Mid-Co Oil Co.'s No. 3 Brumfield, NE cor. NW NW, Section 22-23-2w, an old well drilling deeper, has 300 feet of oil in the hole from sand at 2,686-2,716 feet and will be shot.

COAL CONFERENCE

The proceedings of the International Conference on Bituminous Coal which was held at the Carnegie Institute of Technology, November 15-18, 1926, has been published by the Carnegie Institute and is priced at $7.50. The book consists of 830 pages. The great authorities of the world submitted the results of their investigations of the treatment of soft coal to this congress. The book contains the valuable collection of papers which have been so favorably commented upon. As a whole these papers illustrate the importance of the application of science to the solution of problems which have great commercial value. The papers describing what has been done toward the liquefaction of coal are especially valuable.



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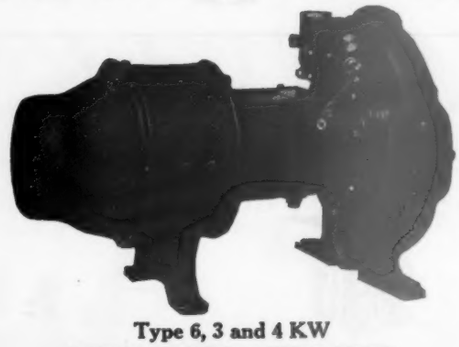

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UNIQUE RAILROAD OF EARLY DAY IN EASTERN OIL REGION

The accompanying pictures of the famous Peg Leg Railroad, one of the curiosities of the early oil country, are the property of Martin Moran, of Tulsa, president of the Texas Pipe Line Co. of Oklahoma, who was a pipe line gauger in the early days of the Bradford Field, a part of which the Peg Leg Railroad traversed. The proper name of the road was the Bradford & Foster Brook Railroad Co. It was built in 1877-78, the first train running over the line from Bradford to Derrick City, 8 miles distant up the Foster Brook Valley, in February, 1878.

Eli Perkins, a noted newspaperman of the period, was one of the first passengers carried on the line. He describes the ride as follows:

"The cars run astride an elevated track on a single rail. This rail is nailed to a single wooden stringer which rests on the top of piles. So evenly balanced is the train that passing over a pond or a creek at the rate of 20 miles an hour the water is hardly disturbed. The motive for building is economy, the price per mile being $3,000 and the cost of a 10-ton locomotive $3,000. The locomotive is a queer-looking thing. An Irishman here compared it to a gigantic pair of boots swung over a clothesline. The boiler is without a flue, the engine without a piston, and the driver without a crank."

The line contained no sharp curves and not much of a gradient. Ten trips up and down the valley were made daily and there was an accident of some kind every day. Finally came the end

On January 29, 1879, the boiler on the Gibbs & Sterrett locomotive blew up and killed six men, all of them officials or employes of the road, and that tragedy closed the career of a railroad unique in American transportation. A month later it was sold and a year later the sheriff disposed of what was left at a public sale.

One of the pictures shows the original locomotive and the other the new one that was being tried out when the explosion occurred, with the old one in the background.

The Bradford Field was also noted for its system of narrow-gauge railroads. They were called "yard wides." The locomotives were all Brooks built and with freight and passenger cars were perfect miniatures of the larger standard-gauge types. John J. Carter, who organized the Carter Oil Co., was president of one of these. There were several distinct systems, including the Olean, Bradford & Warren, the Kendall & Eldred, the Bradford, Bordell & Kinzua (Carter's road), and the Bradford, Eldred & Cuba. High hills and sharp curves made a narrow-gauge necessary. The railroads traversed every part of the big Bradford Field and the Allegany Field in New York state and made fortunes for their owners.

The first locomotive on the Peg Leg Railroad, a curiosity in transportation in the Bradford, Pa., field in 1878, is shown in the upper picture. In the lower picture is the remains of the "improved" single-rail locomotive, the boiler of which blew up on the trial trip, killing six men, and closing the career of an interesting experiment in railroading.

INDUSTRY URGED TO IMMEDIATE ACTION

(Continued from Page 32)

sus shows 5,000 customers to each shoe store, 1,400 to each drug store, 500 to each grocery store and 80 motor car owners to each gasoline station.

A survey of the refining situation in the Mid-Continent Field a few months ago showed that the plans and facilities of the several companies would produce 60 per cent more gasoline during 1927 than they produced in 1926. The probable increase in consumption for the same period would be less than 10 per cent. Utter demoralization would have been the result of this folly.

The Federal Trade Commission has rendered valuable service in preventing the elimination of competition. Its officers are continually on guard watching for mergers and purchases which might wipe out competition. Should it not be just as clearly their duty to prevent the elimination of competition by other means? If the Standard Oil Co.'s statement is true that a continuation of present conditions will "bring disaster to many in the industry" why shouldn't the Federal Trade Commission investigate and report to the politicians that instead of the oil industry being controlled, it is and has been running wild and that wise and proper attention should be given the subject at once. The President of the United States has said that the industrial welfare, prosperity and safety of the whole people is linked with the welfare of the oil industry.

Operated at a Loss

There are about 315,000 producing oil wells in the United States, averaging about 8 bbls. per day. There are 380 wells in the Seminole, Bowlegs and Earlsboro section producing 353,447 bbls. or an average of 930 bbls. per well. Yet 215,227 wells scattered through many

states are producing approximately 142,000 bbls. or an average of about 28 gallons per day. We know that thousands of these wells are being operated at a loss and will be abandoned. They are as necessary to the permanent welfare of this country as the Navy and yet what are we doing about it?

It is becoming such an economic scandal that even the Hearst papers that are generally engaged in critical hostility to corporations are beginning to denounce the oil industry as a whole because it fails to handle in a businesslike way its own economic problems and in an editorial the same papers demand that "our nation should regulate the output and price of its oil."

H. E. Bell, chief supervisor of the oil division of the Texas Railroad Commission, is holding a meeting today with Texas oil producers for the purpose of preparing legislation to curb the overproduction of oil in that State. He says the State of Texas has lost $3,000,000 in the past eight months as a result of reduced prices for crude. The State of Oklahoma is losing at least $600,000 per month in taxes.

It seems apparent that the President of the United States, the Oil Conservation Board and the Supreme Court are in sympathy with the importance of conserving our petroleum resoures.

An opportunity is presented to your organization to take an important part in a movement that will be constructive and helpful to all concerned.

What are you going to do about it?

FEDERAL OIL BOARD ACTIVITY INTERESTED

(Continued from Page 31)

to run its own business and might be a contributory step toward government interference in the free operation of the industry.

The Federal Oil Conservation Board on the other hand recommended the policy of co-operation through co-operation between Government and industry and among different units within the industry, and it is pointed out that the industry, in working with the government conservation board in the present emergency, is simply showing its good faith and acting in working out measures which will protect the nation, the consumer and the industry.

It is recognized by the board that largely the industry must work out its own problems. "The major part of the measures that must be taken to protect our future supplies must rest upon normal commercial initiative and private enterprise," it states. "The field for governmental action is considerable, but to formulate the broader by-laws of the industry in the sense of conservation and to concentrate thought upon them is the major part of the board's task in co-operation with the industry."

To Help Industry

Any action taken by the board in the present emergency it is believed will be the spirit of its conception enunciated above. The members believe that the industry has to work out its own problems but that it needs help in certain directions pointed out in its report. Any meeting held by the board to discuss the present situation would be toward concentrating effort within the industry, with government co-operation, toward the solution of immediate problems.

Conservation is usually associated with shortage or threatened shortage. The condition in the industry is now one of overproduction. The indications are that the present overproduction will be of considerable duration. The industry has never faced prospective pools representing so great an aggregate potential production.

It still holds true, however, that current supply is only kept up by drilling thousands of wells each year. The percentage of new production to total production continues large in connection with supplying the requirements of the consumer. The problem of a future shortage does not appear to be immediate, but a conservation advocate will always cite the fact that the great present production is only hastening the depletion of the exhaustible resource.

It is pertinent to point out that President Coolidge acted in appointing the Federal Oil Conservation Board when there was an overproduction of oil. He recognized the economic fact that overproduction wipes out intrinsic values and in the end is harmful to the public. While the public might benefit by low prices today, the losses entailed by industry are of major importance and, in the case of an exhaustible resource, might result in high prices tomorrow. Essentially, the problem of a future shortage must be avoided or manufacturing productivity will be curtailed.

President Coolidge in appointing the board said: "We are not today, however, facing an undersupply of oil. The production of our 300,000 wells is in excess of our immediate requirements. That overproduction in itself encourages cheapness, which in turn leads to wastefulness and disregard of essential values. Oil, of which our resources are limited, is largely taking the place of coal, the supply of which seems to be unlimited, but coal can not take the place of oil in most of its higher uses, on land or sea or in the air."

SMALL INCREASE IN PLANT OPERATIONS

(Continued from Page 34)

Name and Location—	Daily Capacity	Runs May 1	Runs Apr. 1
Peerless Oil Refining Co., Chanute	3,000	2,400	2,300
Roxana Petroleum Corp., Arkansas City	20,000	12,000	17,000
Sinclair Refining Co., Coffeyville	8,000	7,000	7,000
Sinclair Refining Co., Argentine	7,000	8,000	6,800
Skelly Oil Co., Eldorado	15,000	10,500	9,600
Standard Oil Co. of Kansas, Neodesha	12,000	7,000	4,500
Vickers Petroleum Co., Potwin	3,500	1,500	1,600
White Eagle Oil & Refining Co., Augusta	6,500	5,000	5,000
West Missouri Group—			
Alliance Rubber Producing Co., Centropolis	2,000	Shut down	Shut down
Wilhoit Refining Co., Joplin	1,500	1,000	600
Total	128,500	82,600	79,400

REFINERY OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs May 1	Runs Apr. 1
Crystal Oil Refining Corp., Shreveport	10,500	10,000	9,000
Great Southern Refining Co., Ardis	2,000	Shut down	Shut down
Louisiana Oil Refining Corp., Shreveport, Bossier	20,000	18,850	18,500
Shreveport Producing & Refining Co., Shreveport	5,000	5,300	4,600
*The Texas Company, Shreveport	5,800	5,660	5,660
Total	43,300	39,810	37,760

*Topping.

REFINERY OPERATIONS IN ARKANSAS

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs May 1	Runs Apr. 1
Henry H. Cross Co., Smackover	4,000	4,000	4,200
Home Refining Co., Camden	500	Shut down	Shut down
Home Oil & Refining Co., Hot Springs	500	Shut down	Shut down
Houston Oil Co., Camden	3,000	2,000	2,000
Kettle Creek Refining Co., Pearson	6,000	2,500	2,500
Lion Oil & Refining Co., El Dorado	12,000	4,300	6,000
Newark Refining Co., El Dorado	1,500	1,000	1,000
Ouachita Valley Refining Co., El Dorado	1,000	650	800
Root Refineries, El Dorado	2,500	2,100	2,000
Simms Oil Co., Smackover	1,000	2,000	....
E. M. Tulle, El Dorado	1,000	Shut down	Shut down
Total	34,000	17,550	18,500

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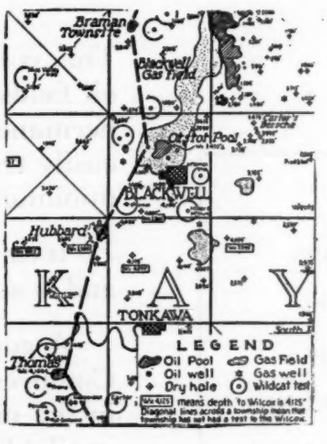

A small reproduction of part of a large map which appeared in a previous issue.

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NATURAL GAS PROBLEMS CONFRONTING OPERATORS IN SOUTHWEST FIELDS

By N. C. McGowen*
Louisiana Gas Co., Shreveport, La.

The problems confronting the natural gas operators of the Southwest are not foreign to those of the industry, as a whole. The Southwest in contrast with the East has been confronted with a sparse population and the lack of industries closely adjacent to the gas supply. This condition has required the building of long, large capacity lines, calling for heavy investments as well as sufficient reserves to support such facilities.

In many instances where the reserves in sight have been insufficient to warrant the building of long, large, expensive lines the operator has been obliged to bring in and develop new industrial enterprises locally.

During the past few years, with the discovery of new fields and the development of large reserves, several long lines have been built to serve distant markets. Some of these lines are furnishing outlets for gas that did not have a local market other than for the manufacture of carbon black.

This industrial development on the part of the operators has resulted in a marked stimulation of business and rapid advancement of communities locally adjacent to the fields, as well as to those towns and cities served at a distance. This marked benefit to the communities served is not limited to them but extends to the entire state through the creation and development of new taxable wealth, a fact often miscredited or even overlooked by the people. To bring the people to the proper understanding of the natural gas industry is to educate them not only as to its benefits but as to the hazards it is necessary for it to assume in rendering service.

Overdevelopment

The problem of overdevelopment of open flow in proportion to the reserves in sight is one that results in discontent on the part of the small operator who lacks a market, leads to the unwarranted belief on the part of the uninformed of the presence of unlimited reserves of natural gas, thereby causing the development of false market conditions and the resultant tendency to overdevelop pipe line facilities without the necessary gas in reserve to support them.

In a new field, where gas is discovered, if some plant could be worked out with the owners of the leases to prevent the unnecessary completion of gas wells that must be closed in, because of the lack of a market or pipe line facilities, the owners of the leases would eventually benefit to a greater extent by allowing a market to be developed, facilities put in, and then carrying on drilling operations to meet the demands of the market rather than developing a large amount of openflow out of proportion to the reserves of gas in the sands, thereby giving the impression to the public of the great amount of gas that should be had for almost nothing.

To correct this situation, it is going to take the closest co-operation and a more thorough understanding between the marketing companies and the gas producers. We are all aware of the fact that the best place to store natural gas is in the ground and that it is not an economical operation to drill two wells where one well will eventually drain the gas from the sand. While the drilling of fewer wells does not develop the openflow that will be developed by a greater number, however, a few wells over a period of time will recover in most fields all of the gas more economically and more efficiently, and will produce a greater return to the operators at less expense, and at the same time conserve the supply.

Co-operation Urged

To accomplish this, the operators interested, in each and every field, should make an attempt to find out the facts regarding the gas accumulation. They should determine as correctly as possible the conditions under which the gas is trapped, the probable extent of the reservoir both as to thickness and area, as well as the water conditions so that some idea as to the probable amount of gas in reserve can be arrived at. They should endeavor to work out a well-spacing plan which under ordinary practices will efficiently recover the gas and also reach some agreement whereby wells will not be drilled too deep into the sand, causing a rapid encroachment of bottom water and the drowning out of adjacent properties. I believe this sort of plan should be worked out by the operators and agreed upon by them, rather than through the medium of orders issued by regulatory bodies.

A plan such as suggested above may be questioned by a great many as being impractical and highly theoretical. No doubt there would be considerable difficulty in getting all the operators in any given field into a plan of this kind.

Experience has shown that the sooner each operator realizes that to conserve a field, so as to produce the most return for every individual or company investment, it must be done with the co-operation of the operators and that through co-operation of the operators development costs can be reduced and the drilling so regulated that the greatest amount of gas can be recovered. It seems to me that the co-operation between the operators in such a plan is feasible and worth while.

In some states the state regulatory bodies have regulated the withdrawal of gas by allowing gas to be withdrawn from wells on the basis of a certain per cent of their openflow capacity. While this method of control does tend to conserve gas and seeks to hold a uniform withdrawal on the field, it is my belief that, in as much as the rock pressure of a reservoir has more to do with the gas in reserve than any other factor, rulings or agreements requiring the holding of a back pressure, based upon the rock pressure, is the best method to control the withdrawal of gas from any producing horizon.

The waste of natural gas in horizons where oil occurs down the flanks of the structure is today a difficult problem to the oil and gas producers. It is the inclination of the producers to produce oil at the sacrifice of gas when both oil and gas have a value and both can be produced in most cases economically.

Oil and Gas Production

During the latter part of 1922 a gas well was completed in the Southwest, making 30,000,000 feet of gas with 1,080 pounds rock pressure. Several additional wells drilled in the territory indicated a field of approximately 10 square miles in area and having an estimated recoverable reserve of 100,000,000,000 feet of gas.

In 1923, after six wells had been completed, a line was laid into the field for the purpose of taking out the gas. This line was completed in the fall of 1923.

At that time a well drilled for gas on the edge of the field was deepened and it showed a considerable amount of oil; in fact, after a test, the well actually produced 150 bbls. of oil and 30,000,000 feet of gas. This resulted in a number of wells being drilled for oil. By the summer of 1924 there was a well on practically every lease in the field, producing oil and gas. The gas was blowing into the air and the oil was saved. Within a year there were approximately 200 wells completed in the field. In the fall of 1924, one year after the pipe line facilities had been built, there was not enough pressure to feed gas into the line. The gas reserve, estimated at 100,000,000,000 feet, had been dissipated with less than 1,000,000,000 feet taken from the field through pipe lines and, in the fall of 1924, the pipe line extension to the field was used to carry gas in from other fields for fuel for drilling operations. There was approximately $4,000,000 worth of gas in this field, based on 4 cents per 1,000; there was less than $40,000 worth of gas in this field recovered and sold. Up to the present time there has been about 8,000,000 bbls. of dollar oil produced.

The conditions in this area were that gas was present on the high part of the structure. Oil was found in the same sand on the flanks. The oil wells came in making a small amount of gas. The wells high on the structure making gas only were blown wide open with the hope that they would blow into oil. This resulted in the gas being entirely wasted and the removal of pressure from the oil in less than one year.

If the operators had co-operated with each other to the extent of proper well spacing for both oil and gas wells and would have been willing to have pinched back the oil wells, allowing the gas wells to feed into the lines as the market would absorb it, the gas would have been recovered and sold, the pressure would have been maintained on the oil, resulting in a greater ultimate recovery of the oil with less lifting expense.

I cite this one instance to show the necessity for the closest co-operation between the producers, so that when oil and gas are found in the same horizon some plan can be worked out to recover and market both.

For Industry to Solve

This is just as much a problem of the gas-marketing and pipe line companies as it is of the producers. It is, therefore, up to the gas industry to convince the producers to hold their gas for the market, as well as to provide markets and facilities to take care of the gas. I am of the opinion that the operators should not await action on the part of regulatory bodies to meet these problems, but should solve them, as they arise, through close co-operation.

The relation of reserves to pipe line construction is a problem of great importance to pipe line companies. These companies are quite often taxed beyond their capacity to market gas from new fields, and in a great many cases these fields have more gas than the immediate market can absorb but do not indicate sufficient reserves to warrant the construction to distant markets of long pipe lines, entailing large outlays of new capital.

Experience has proved, however, that once additional markets and market facilities have been provided, additional gas is generally found either in the same pool or in adjacent pools, through the stimulation of development caused by the new outlet.

I have reviewed figures compiled on a gas area that had in known reserves 170,000,000,000 feet of gas with an annual withdrawal of 35,000,000,000 feet. Additional markets were developed and pipe lines constructed which increased the withdrawal from the field, over a period of one year, from 35,000,000,000 feet to 55,000,000,000 feet.

With the additional markets in view, additional drilling was carried on, not by the companies providing the markets but mostly by wildcatters' who made discoveries extending fields and who brought in new fields adjacent to the pipe line facilities, so that when the withdrawals from the field reached 55,000,000,000 feet the available reserves were 270,000,000,000 feet.

Therefore, after the installation of the facilities, investments were more secure from the standpoint of gas by an additional 100,000,000,000 feet of gas in reserve, and, while we are all from time to time confronted with the possibility of shortage of gas, our problems in the Southwest in the past few years have been the development of markets for the gas rather than the matter of reserves to supply the existing markets, and, as I have already stated in discussing one of the other problems, if the gas companies develop the markets and install facilities, I am quite sure the producers will meet us half way in a safe and sane development of the gas reserves, resulting in conservation which in the end means larger earnings in both the oil and gas business and more benefit to the public we serve.

*Before Natural Gas Association of America, Cincinnati, Ohio.

WILLIAM M'GINN KILLED WHEN AUTO TURNS OVER

ARTESIA, N. Mex., May 5.—William McGinn, secretary of the New Mexican Oil Men's Association, was instantly killed today when an automobile he was driving hit a hump in the road, swerved, and turned over, throwing McGinn clear of the car.

In the car with him was Sterling Beardsley, New York cotton broker and one of the owners of the Maljamar Oil Co. He was not seriously hurt. The men were driving on the Artesia-Carlsbad road.

McGinn was an experienced newspaper man and a World War veteran. He came from Cincinnati to the Southwest and worked on Fort Worth newspapers until coming to Artesia to take charge of public relations work for the Artesia Chamber of Commerce. He is survived by his wife who lives in Artesia.

DEATH OF T. S. SLIGH, JR.

Readers of The Oil and Gas Journal will learn with regret of the death of T. S. Slight, Jr., many of whose articles have appeared in this publication. Doctor Sligh was killed by the accidental discharge of a pistol at South Bend, Ind., where he had recently joined the engineering staff of the Studebaker Corp. He had been connected with the Bureau of Standards at Washington since 1916, specializing in the study of lubricating oils in the automotive power plant section. His investigations had won him national repute as a physicist.

SEES EUROPE MOTORIZED

An article by Friedrich Bergius on the influence of the synthetic production of oil on the oil industry appears in the Petroleum Zeitschrift. The inventor of the Bergius process shows that in the order of increasing tonnage of world production we have iron, wheat, petroleum and coal. Petroleum is the second greatest tonnage product in the world, coal being first. He shows that the 200,000,000 inhabitants of the Americas produce 13 times the oil output of the 450,000,000 inhabitants of Europe, with a consequent economic dependency of Europe for this raw material on America and Asia. He predicts the growth of the automobile in Europe to somewhat like American conditions with a consequent greater demand for oil and a further dependency on the foreign output until the synthetic oil industry frees Europe from this intense economic handicap.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FOR SALE—5 Deane Triplex Pumps. 5 by 8.

1 No. 2, 1 No. 5, 1 No. 6, 1 No. 7, 1 No. 10, 1 No. 11 Sweetland Oil Filters.

Two 10-inch S. Roturbo Centrifugal Pumps. Six 10-inch S. Centrifugal Pumps. Steam Turbine.

Storage Tanks, all sizes. Send for list.

Send us your inquiries. We buy your surplus equipment.

CONSOLIDATED PRODUCTS CO.
15 Park Row, N. Y. C. Barclay 0603.

WE ARE wrecking our refinery at West Tulsa and have the following material for sale. Compressors, stills, vacuum pumps, gas engines, steam engines, storage tanks, boilers, agitators, pumps, towers, Foamite Fire equipment, oil filters, drilling equipment, electrical equipment, fittings of all sizes and other articles too numerous to mention. This material is in good condition and some of it is new.

MIDCO OIL CORPORATION,
Midco Bldg., Ph. 2-9000, Tulsa, Okla.

FOR SALE—SURPLUS EQUIPMENT

String cable tools. 3—75 HP G.E. drilling motors complete; 8, 10-25 HP G.E. pumping motors; 1, 84 ft. International Steel Drilling Derrick; 8 complete sets 6 in. rig irons; 3 L. C. Moore calf wheel outfits. Priced to move. Condition first class. Write Iowa Petroleum Co., Putnam Bldg., Davenport, Iowa.

FOR SALE—Used casing. 900 ft. 12¼ in. 50 lb. 1,400 ft. 10 in. 40 lb. In good shape. W. E. Huffine, Yale, Okla. Call DA-15 or 440 W. 29th, Okla. City. 4-2328.

USED LINE PIPE AND CASING FOR SALE

7—25-h.p. used gas engines.
10—6-in. standard rigs.

15,000 ft. 5½-in. used casing.
15,000 ft. 6⅝-in. used casing.
10,000 ft. 8¼-in. used casing.
5,000 ft. 10-in. used casing.

75,000 ft. 3-in. used line pipe.
50,000 ft. 4-in. used line pipe.
20,000 ft. 6-in. used line pipe.
For immediate shipment from our Texas yards.

KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg.,
Fort Worth, Tex.

STANDARD RIG FOR SALE

New 120-foot standard rig, complete; has just drilled one well; good 6-inch Marion rig irons; set Marion iron bull wheels; set Lucy calf wheels; 65 H. P. Lucy boiler; new style Ajax engine complete; O. W. S. engine; two 250-bbl. steel tanks; underreamers; elevators, gas burners; belts; casing line; crown block; casing clamps and considerable other drilling equipment; all in first-class condition; practically as good as new and offered at a great discount. Write R. S. Randerson or H. L. Berry, 318 Braniff Building, Oklahoma City, Okla. Telephone Maple 0778.

FOR SALE—300 Horse Power Natural Gas Rathbun-Jones, 3 cylinder Gas Engine. Direct connected to G. E. 170 K.W., 240 volt A.C. Generator with rheostat. Also 250 Horse Power Gas Producer. First class condition.

W. W. SLY MFG. COMPANY
Cleveland, Ohio

FOR SALE: 6—150 h.p. Boilers 6'x18' in good condition.
1—70 h.p. Bruce-McBeth Gas Engine.
1—5-ton Monarch Caterpillar Tractor.
Ajax Generator & Supply Co.
708 Ave F., Burkburnett, Tex.

FOR SALE—Two new four-room sectional houses; 25 per cent discount for quick sale. Foster, 115 South Boston, Tulsa, Okla. Phone 3-1581.

FOR SALE—Cheap, one 4-cylinder St. Mary's Diesel Oil Engine; total rated horsepower 152½. Arch Rollow, Wynnewood, Okla.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS

Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

MACHINE WORK — Foundry products; let us figure on the manufacture of your equipment. First-class service. Reasonable prices. Prompt deliveries. Large establishment.

GENERAL ENGINEERING & MFG. CO.
St. Louis, Mo.

BUSINESS OPPORTUNITY

GEOLOGISTS AND SEISMOLOGISTS

We are specialists in portable short-wave radio for geological and point-to-point work. Many successful sets in the field. Tell us your requirements; let us make estimates. Acme Radio Service, 810 Milam Street, Houston, Tex.

CAPITAL—Reliable broker with following seeks attractive stock or bond issue. For prompt action, write to B. W., 810 Broad St., Newark, N. J.

ANY OIL PRODUCING COMPANY wants a reliable geologist to pick out places to drill for oil, write me. My work proves what I know. A. C. Jones, Box 303, Lancaster, Texas.

FOR SALE or trade garage business on Highway No. 66, mining town, 2,000 population. Full line Ford parts, accessories, filling station, battery station, work shop with machinery and storage for 100 cars. Write, Box 385, Quapaw, Okla.

VENEZUELA — Manufacturers and jobbers of oil field equipment and supplies will be pleased to learn of the organization of the "Maracaibo Specialty Company" which has been organized for the purpose of doing preliminary advertising, reporting drilling activities, and acting as representative for manufacturers of equipment, who wish their products placed on the market in Venezuela. Commission basis or salary. Maracaibo Specialty Co., 705 Second National Bank Building, Houston, Texas. Phone Preston 0633.

$4.00 PER ACRE
11,000 ACRE RANCH

Make Ideal Fishing-Hunting Preserve. On Eleven Points River, Oregon County, Mo. 250 acres cultivated. Four sets buildings. Heavy woven wire fence. Fine cattle, sheep and hog range. Well watered. One day shipment St. Louis Markets.

J. RICHARD BROOKS,
Alton, Mo.

WANTED—Organization or individual with wide acquaintance and following in oil fields as exclusive representative for established company manufacturing product sold to oil companies, producers and drillers. Opportunity offers unusual earnings with steady repeat sales. Applicants with some mechanical knowledge preferable. Address with full information Box B 832, The Oil and Gas Journal, Tulsa, Okla.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

HAVE YOU a rig to rent for acreage, or will you drill a wildcat block of acreage in southwest Texas? If you will, I have what you want, with good geology and well located. Address W. S. Poole, Beeville, Tex.

PLAY SAFE

For Sale—The controlling interest in a successful Furniture Business, doing over $100,000 net yearly. Located in a beautiful Mid-West Metropolitan city, close to one-half million population. This store is over 25 years old and the business has a good personell and is well organized, so that knowing this business thoroughly would not be so essential. A wonderful opportunity for a man with 75 to 100 thousand to make a safe investment with a sure profit. This will bear the strictest investigation. Write to

BOX B-813
The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

I AM organizing syndicate to drill test well in Okmulgee county; unusual opportunity. For particulars address James L. Powell, 614 Barnes Bldg., Muskogee, Okla.

SPANISH-ENGLISH TRANSLATIONS
Legal Documents, Catalogues, etc.
Rapid, Accurate, Confidential
COMMERCIAL TRANSLATION SERVICE
P. O. Box 1533, Dallas, Texas

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Established 1910
H. V. ROBERTSON & CO.
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Accountants and Auditors
Income and Estate Tax Service
705-6-7 Amarillo Bldg.,
Amarillo, Texas.

WANTED

INFORMATION WANTED of oil wells and oil holes, which at some point in their depth have showed oil—real oil—a well, say of one to ten or twenty barrels, and have not had a field developed around them, or have not been made into commercial wells themselves.

Will pay for the information provided upon investigation by advertiser, the information furnishes a real basis or point from which to work out structure or high or raise, which could be drilled. Jamot Brown, Florence, Colo.

WANT to buy producing royalty, Oklahoma or Texas preferred Must stand strict investigation and be real bargain. $25,000 to $35,000. A. H. Livingston, Box 1214, Muskogee, Okla.

WANTED—Capital to finance well in East Miss., 12,000 acres practically solid, good structure, geological reports and maps sent, if interested. Practical oil men. P. O. Box 1075, El Dorado, Ark.

WANTED—Blocks of acreage for future development in Oklahoma and Texas. No immediate drilling contracts considered. Submit maps and geology. Box B-833, The Oil and Gas Journal, Tulsa, Okla.

ROYALTIES WANTED—Producing, offset or under drilling wells. Give description, price, age and full particulars. Box 1359, Tulsa, Okla.

SHALLOW settled production wanted. Will pay cash for shallow settled production where more drilling can be done. C. E. Gunhus, New Grand Hotel, Billings, Mont.

LIMITED issue stock, new company, prominent Amarillo men, 2,050 acres leases best proven production Texas Panhandle. High grade investment. Opportunity for investors and agents. Write or Wire: E. A. Peek, Smith Bldg., Amarillo, Tex.

WANTED—Shallow structure in Mid-Continent Field; large acreage; without bonus; for drilling test. Geological report and map necessary. Send details. Shallow Sands Oil Producers Syndicate, 404 Empire B'dg., Denver, Colo.

ROYALTIES WANTED—Producing-offset, and under drilling wells; also producing properties and leases. J. Ben Brown, 115 North Vancouver St., Tulsa.

WANTED—Leases, royalties and production to sell. Waltman, Barnsdall, Ok.

DRILLER WANTED to drill well 3,500 ft. or deeper in Sec. 1, Twp. 3n. R. 5w in Grady County, Okla. State cost, condition and time required. J. Mazur, 1831 Evergreen, Ave., Chicago, Ill.

WANT real bargains in producing royalties in Okla. Plenty money. Richard Hill, 813 E. Haskell, Tulsa, Okla.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

POSITION WANTED

SUPERINTENDENT — Capable of handling complete modern refinery or will accept position with small reputable concern. 25 years experience. Box B-840, The Oil and Gas Journal, Tulsa, Okla.

CHEMICAL engineer and refinery superintendent with over 22 years' experience in European and American crude oils, specialist in lub oils and high vacuum distillation, desires change. Best references. Box B-736, The Oil and Gas Journal. Tulsa, Okla.

CIVIL ENGR. 5 years experience in farm and pipe line surveys, large tank grades, inventory work, etc. Desires position with producer or pipe line company. Go anywhere. Best references. Box B-810, The Oil and Gas Journal, Tulsa, Okla.

WE HAVE available a man who can take charge of your meter and regulator repairs. This man is a thorough mechanic; has had charge of our provers, service department and meter assembly. It has been our practice for some time to train men for the gas companies, and this man is ready to save some gas company a lot of money on their repair and maintenance costs. For further information address Mr. L. A. Dixon, Pittsburgh Equitable Meter Co., 400 Lexington Avenue, Pittsburgh, Pa.

REFINERY accountant, age 30, 12 years' experience in refining; formerly superintendent of skimming plant; for the last five years in direct charge all refinery accounting for large corporation. Box B-815, The Oil and Gas Journal, Tulsa, Okla.

TRAFFIC MANAGER — 8 years refinery sales and traffic experience. Mid-Continent field. Open for position May 15th. A-1 reference. Box B-830, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

FOREIGN WORK—Young man wanting work of any kind in South America, write for Free particulars. South American Service Bureau, 14600 Alma, Detroit, Mich.

WANTED—Refinery Construction and maintenance engineer. Prefer man who is familiar with Dubbs Construction. Salary to start $210 per month. Please furnish references. Box B-834, The Oil and Gas Journal, Tulsa, Okla.

AMERICAN ENGINEERS Service, Pittsburgh, Pa., requires for employment proposals. Graduate Mechanical Engineers; Steam and Chemical maintenance engineers; Designing Draftsmen; Piping; Structures; Power equipment; Chemist; Testers; Accountants; Civil Engineers and Oil Geologists. Free to employers.

PATENT ATTORNEYS

PATENTS—Oil well cases a specialty. Reliable services by an experience practitioner devoting personal attention to each case. References to oil well clients in Tulsa. B. P. Fishburne, Patent Lawyer, 550 McGill Bldg., Washington, D. C.

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray B'dg., Washington, D. C.

MONEY RAISING

RAISE CAPITAL!

Through sale of securities in your corporation. Worthy enterprises only. Twenty-five years experience. Highest references.

NORTHCLIFFE,
25 West Forty-Third, New York.

DO YOU NEED MONEY for organising or financing oil or mining deals? Write 131 E. 13th, Oklahoma City, Okla.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

ROYALTIES—PRODUCTION

SEMINOLE royalties near big wells. Also Oklahoma deeded land cheap, gas constantly seeping from creek. Bargains. Box 608, Okla. City, Okla.

ONE-SIXTEENTH oil, gas and mineral rights for sale, Northeast Fayette County, leased by Sun Oil Co. See A. H. Becker, Jr., Carmine, Texas.

FOR SALE—1/64th. Under Humble Oil & Refining Companies well in Henderson County, Texas. Known as the Humbles mill on dollar block. 1,128 acres on the Susan Jones survey, Guy S. Perry lands. $80.00 basis, investigate this, it is a real buy. Operators finance company, 319 Fidelity Union Bldg., Dallas, Texas.

ROYALTY for sale: 1/32 on 160 acres coredrilled structure near Schulte, Sedgewick County, Kans. Marland, Roxana now drilling deep test on adjoining 160 acres. Will sell all or part. 302 Brown Bldg., Wichita, Kans. Phone Mtk. 3871.

LEASES AND ROYALTY IN OKLAHOMA'S NEXT NEW OIL FIELD

The Magnolia has just placed a rig on the SW of NW of Sec. 26 Township 5 S., Range 7 E. in Bryan County, Oklahoma, and will spud in at once.

The Company has a sol d block of 2,300 acres, good geology, and will make a thorough test.

We have for sale all the acreage surrounding this block for a half mile and more. All leases commercial, 10 years, Magnolia Form X-1568, first rental of $1 due January 1928, leases of record and abstracted.

Will sell in blocks 10 acres or more within the half mile limit of Magnolia block at $10 per acre. Beyond this limit at $5 per acre. Abstracts furnished on 40 acres or more. Attorneys Certificate on less.

Have royalty of 1/16 within half mile well at $10 per acre.

If you want to buy, write for maps, copy of geology or other information. Four other wells going down in this vicinity, two of them now dr lling. Best bet in Oklahoma for the money. Only eight miles East of the Bibo field in Marshall County, and will undoubtedly be a good shallow field.

Reference by permission; Merchants & Planters National Bank, Commercial National Bank, Central State Bank, all of Sherman, Texas. First National Bank, Durant, Okla. You may be assured of a square deal, and f you want to take a little gamble, which offers great possibilities of big returns, Act Now. Next week may be too late. Address:

JOHN MARSHALL, Sherman, Texas.
HORACE MARSHALL, Durant, Okla.

CONTROL offset royalty to 3,500-bbl. producer, 2 wells on sand, also own producing oil and gas royalties in Oklahoma fields. Only real purchasers wanted. P. O. Box 825, Tulsa, Okla.

FOR SALE—Oil royalty on 320 acres land, four miles north Phillips discovery well in Jones County. Also lease and royalty on 300 acres in Smith County, close to Steen Saline, where the Gulf people have large holdings. T. L. Odom, Tyler, Tex.

WILL BUY producing royalties and close-in non-producing royalties from owners giving full details and right price. P. O. Box 1440, Tulsa, Okla.

J. F. MARION OIL COMPANY
Magnolia Building
Dallas, Texas
Buys and sells Texas Oil Leases and Royalties.

PECOS COUNTY ROYALTY—Sec. 49, Blk. 11, H. & G. N. Ry Co., 618 acres, 2 miles west of where Orient Ry. crosses Pecos River; lease owned by The California Co.; will sell 1/64th for $1 acre; reasonable terms. Owner, L. W. Stieren, 815 Alamo Bank Bldg., San Antonio, Tex.

LEASES—PRODUCTION

"IN THE TREND"
Southeastern New Mexico and west Texas counties—Lea, Eddy, Chaves, Gaines, Andrews, Winkler, Loving, Ward, Culberson and Pecos Counties, oil and gas leases, royalties and drilling blocks We buy and sell. F. S. Blackmar, P. O. Box 541, Roswell, N. Mex.

OMER MCKOWN AND SON
Maud, Oklahoma

Buy, sell and broker leases and royalty southeast Seminole and south Pottawatomie Counties, Okla.

PROVEN LOCATIONS — Guarantee never fails, on oil or gas, wildcatting our specialty, depth and sands, for particulars, write Redmon & Bulk, 312 Cherokee, Humbodlt, Kans.

OIL IN FLORIDA?
Drilling blocks available to responsible companies or individuals with tools ready to drill on the Ringling tract in Sarasota County in close proximity to Salt Springs and well No 1 of the Associated Oil & Gas Co., now drilling. The geology has been favorably reported on by geologists and experienced oil men. For other information, write
KENNETH HAUER
Sarasota, Fla.

160 ACRE Oil Lease on formation $1,600. Will take $1,000 interest in drilling. 520 Broadway, Joplin, Mo.

The undersigned will offer for sale, 80 acres of oil land, not leased, in the Southeast of 7-24 North Range, West in Noble County, Okla., for one hundred and twenty five an acre. Address of owner. A. J Sauer, Box 566, Lancaster, Calif.

FOR SALE — Selected oil and gas leases adjoining producing and drilling leases in Barren County, Kentucky. Prices right. L. W. Preston, Glasgow, Ky.

HUMBLE OIL CO. WELL in Cherokee County Texas came in approximately ten thousand barrels high grade oil per day. We find ourselves with one thousand acres leased near this well on very top of same structure; we feel certain of ten thousand barrel well. We need finance to drill the first well on this one thousand acres. We can offer a fine deal to high class broker or individual who might be interested in selling interests in whole thousand acres and well to be drilled, to clients for funds to drill the first well. We are busy drilling wells and do not have time to raise these funds but we do not believe a better opportunity is offered in America today to make big money. The property and ourselves will stand the acid test; we operate on highest business standards and will furnish every reference required as to our honor, integrity and ability. Remember parties investing in this property receive an interest in the whole thousand acres and all the oil ever produced on same. Write or wire us for complete information.
GRAHAM DEVELOPMENT CO.
First Natl. Bldg., Chickasha, Okla

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars or request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

OIL LEASES and royalties, Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Da las, Tex.

OHIO COUNTY, KENTUCKY
Acreage for sale, close to producers and drilling wells. Best play in Kentucky.
G. Taylor Yewell, Owensboro, Ky.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

TO LEASE or sell—One-half interest in Section 30, Township 19, Range 13 West, in Union County. Edna Walbert, 758 Park Ave., Hot Springs, Ark.

LEASES—PRODUCTION

IF YOU have a large block of acreage on a good structure I will finance the drilling for part of acreage. C. E. Gunhus, New Grand Hotel, Billings, Mont.

NEW Oil Field, Ky. Shallow drilling, one well standing full of oil, one well now drilling. Five new well locations made. Will sell a few leases at $2, $3, and $5 per acre. P. O. Box 96, Bossier City, La.

OKLA. oil and gas lease, proven territory, production certain, if interested write for terms. Anton Koch, Henryetta, Okla.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas.

DRILLING BLOCK secured on approved acreage and well supervised; no bonus; we keep some acreage as fee. Nicolle, Petroleum Geologists and Operators, Box 1720, Fort Worth, Tex.

A Good Habit

The classified section of The Oil and Gas Journal is a most excellent medium of exchange for every commodity and service pertaining to the petroleum industry.

Form the habit of referring to these columns to get in touch with bargains in leases, royalties, production, second-hand equipment; with business opportunities and efficient help. Many ads worthy of your investigation appear each week.

You can find what you want—quickly—if you—

Consult the Classified

DRILLING CONTRACTS
About 7,500 acres Southwest Quanah, about 8,000 acres Northwest Quanah, all in Hardeman County, Texas. Good geology, new commercial leases, five-year new form 88 special rental one dollar per year, fifty cents every six months. Drilling dates August first and September first. Four thousand foot well required. Forty five hundred foot test to begin immediately on adjoining block.
EUGENE B. SMITH & CO.
Quanah, Texas

LOUISIANA INTERIOR SALT DOMES

Oil and Gas leases on Prothro Dome, Bienville Parish, Louisiana. Complete protection. Address,
401 RICOU BREWSTER BLDG.,
Shreveport, La.

FOR SALE — Leases in proven gas area of Webster Parish, Louisiana. $20 per acre. Box B-831, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PRODUCTION

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culberson Counties.
Drilling blocks. Leases. Royalties. Ranches in fee.
H. F. Anthony, Pecos, Tex.

KENTUCKY leases on structure, low price and liberal terms. A. W. Richards, Center, Ky.

AMARILLO PANHANDLE OIL FIELD
Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

THIS MAY INTEREST YOU
I am at the Claudia Apartment No. 17, 212 4th St., San Antonio, for a short period for the purpose of selling our three ranches in North Central Duval County, McMullen County and Zuvalla and Maverick Counties, Texas—a total of over 40,000 acres at prices and terms, etc., most inviting. While these are excellent livestock ranches some mixed farming is being done and eventually the greater part of this area will be operated agriculturally. Also as these ranches lie in the general trend of oil development, drilling is just starting under the supervision of responsible people.
Communications in care of above address will receive prompt attention.

FIVE YEAR Commercial lease on six thousand acres situated on two salt dome structures. Dri ling optional. Test drilling; others to be drilled. Address Box 132, Delcambre, La.

FOR SALE or lease, 100 acres semi-proven oil land. Oil well previously drilled on land. Oil showing and gas blowout. Land convenient to railroad. Furnish good title. If interested, write W. H. Smith, 1704 E. 7th St., Austin, Texas.

TENN. ACREAGE — In active field will sell or let for drilling on the parts, on pipe line. For details, Frese 419-13, Bowling Green, Ky.

2,500 ACRES within 3 miles of Hartley. Will lease for a well. Don't answer unless you mean business. S A. Bushey, 916 East Wilson St., Denton, Texas. Phone 579.

SHALLOW leases and production for sale, bargain. Act quick. H. W. O. 816 E. Seventh St., Tulsa, Okla.

SMALL producing leases for sale in Western Ky. R. E. Cope, Bowling Green, Ky.

FOR SALE—Oil leases in Cimarron, Texas, Beaver and Woods counties. Orbee Lease Co., 1114 Colcord Bldg., Oklahoma City, Okla.

I HAVE several hundred acres of oil and gas leases in McCurtain County, Oklahoma, running for 5 years, $1 per acre. P. T. Calahan, Idabel, Okla.

FOR SALE—DOGS

FOR SALE — Llewellyn and English setters, also rabbit hounds on trial, pamphlets free. O. K. Kennels, Marydel, Md.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, re'eases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

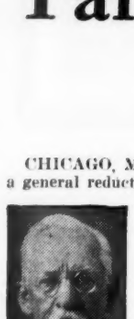
CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

Tank Wagon Reduction Upsets Market

Lowering of Gasoline and Kerosene by Standard of Indiana Stops Improvement in Tank Car Quotations

By J. B. Waldo

CHICAGO, May 9.—Announcement of a general reduction of 2 cents in gasoline and 1 cent in kerosene by the Standard Oil Co. of Indiana, effective May 10, completely upset the refined market here late today. The reduction applies to all of the 11 states of the Middle West in which the Standard of Indiana operates.



The lower tank wagon prices come at a time when the tank car market on both gasoline and kerosene had been showing an upward turn for several days to an improved demand. The tank wagon reductions are expected to check this improvement at least temporarily. Trading was at a standstill today following the announcement of the reduction.

Up to Thursday there were several refiners openly quoting 6¼ cents or meeting that price while their first and formal quotation was 6½ or 6⅜ cents. But on that morning there was a general advance by refiners to the 6½-cent rate and nothing else. Some quoted 6¾ cents but they did not expect to get the business and possibly did not want it. The market today was firm at 6½ cents. Just what effect the tank wagon reduction will have cannot be determined for several days. There are several plants that have had gasoline to sell to the trade at large whose entire output will be required for their own distribution from now on if the consumption is maintained at its present level. The vast majority of the gasoline ordered is of the 58-60 437 end point or U. S. Motor grade. The demand for 60-62 437 or better probably is second as this meets the requirements of the Wisconsin state law and is also required in other parts of the territory. Many of the dealers like this grade and it has been freely offered of late. One refiner broadcast an offer of 6⅛ cents out of Group 3 on Monday of last week but the quantity to be disposed of was not large, some 25 cars being offered. The antiknock motor fuels are selling very well and the demand for the higher tests is largely to compete with ethyl gasoline or some of the antiknock products which are selling at the normal station price. There is little inquiry here for gasoline for export. Occasionally some inquirer will ask for quotations but there is little result. Natural gasoline is doing some better and the outlook is improved although this product is not active in this market.

Situation in Ohio

The situation in Ohio is still very unsatisfactory. There is constant competition from the East and South as well as the central states and refiners in the Mid-Continent Field. Large companies are fighting for gallonage and all the devices incident to such a strife for business are used by every concern that is actively in the struggle. One of the concerns with stations in Ohio described the situation there as one in which everybody was a "bootlegger." It is a sort of free for all scramble for gallonage with the probability that no distributor is making a fair profit even at the very low costs for gasoline which are averaging now about 5¾ cents over the state, Group 3 basis. If anybody is making any money out of the Ohio gasoline business it is the close-by refiners. The Atlantic Refining Co. has been offering U. S. Motor gasoline from Franklin or Pittsburgh at 8 cents against quotations of 5¾ cents to 6 cents made by Group 3 refiners for shipment to Ohio.

An active demand developed last week for kerosene. Reports by oil men in the Northwest were that the weather had turned fine and the farmers were working night and day to prepare the ground and get in their crops. Tractors are being used more than ever and there is a sharp demand from these sections for kerosene. This demand is also increasing from the more southern parts of the territory. There has been a distinct improvement in prices and 4¼ cents is now the bottom instead of the top price to the trade. In fact refiners and marketers are paying this price for 41-43 kerosene and in some cases taking all that the seller could ship promptly. One of the largest marketers in the Northwest has bought in 10 car lots at 4¼ cents and a large refiner with distribution over the territory has been purchasing in 25 car lots and coming back for more. The peak of the demand is not expected to last very long but it may be sharp for the remainder of the month. Some offices report they have sold more kerosene than gasoline on some days last week. Some untreated gasoline or only partly treated which will not pass the tests but is a fairly good tractor fuel is being offered at shaded prices but this will not do for incubator or lamp use and is sold by the careful sellers for what it is, a tractor fuel only. Some quotations of 4⅜ cents and 4½ cents were made at the close of the week showing an advancing tendency in the market but the larger refiners were more occupied in trying for the higher gasoline price range and sold the trade their kerosene at their previous price which in most cases was 4¼ cents.

The distillate market continued extremely quiet, only occasional cars being ordered from scattered buyers. Local distributors are in some cases reducing their prices for all grades of furnace oils but the larger concerns say they see no advantage to be gained at this time as there is practically no business except small filling in orders and these will be placed anyway. The time for any readjustment of the local tankwagon scale on furnace oils is at the opening of the season, not the close, and they propose to let their present tank wagon prices run along as they are for the present.

Gas Oil Strong

Gas oil is strongly held right now and some large business has been done with local refiners and marketing concerns. The H. H. Cross Co., which has some large utility contracts, has made one purchase from a Group 3 refiners of 1,500,000 gallons of straightrun gas oil as reported by the seller and it is also stated that both the Atlantic Refining Co., and the Sinclair Refining Co. have been in the market for large quantities. One local marketer was seeking for 2,000,000 gallons of 32-26 straightrun gas oil but stated the best price that could be paid was 2¼ cents. On the other hand several refiners who have been storing their gas oil for cracking purposes have sold a good part of their holdings. As these refiners are now operating their refineries as skimming plants they are probably securing additional supplies from their daily runs. Generally the opinion seems to be that the low point of the gas oil market has been passed but the argument is still current that with so many plants closing down or reducing the runs to their crackers, the production of gas oil will be on a large scale and result in further accumulations which will hold the market about where it is today. As previously stated some of the largest users of gas oil have stated they believed that 2½ cents was a good price for them to fill their tanks and some of the distributors have also seemed willing to do the same thing but these want an oil suitable for the domestic oil burner which is a product that is not so plentiful right now and for which the market is at present 2¾ cents to the trade. Some refiners state they will begin to store their cracked gas oil for fall and winter use as a furnace fuel. Some of these have their own distribution and will not have any of this product for sale again this season. At the close of the week the market was firm with prices holding but not advancing.

Fuel Oil Unsettled

Fuel oil continues to be unsettled although the developments in the crude situation during the week are more favorable to present prices at least. There is little new business and orders are wanted. A typical instance is that of a dealer who called a refiner for price on five cars of 16-18 gravity fuel oil and was quoted 90 cents. The buyer said he wanted to buy at 87½ cents and was asked if he had instructions for all five cars. On replying that he did the refiner's representative said to send them on, they would fill the order at the price named, 87½ cents. Concessions such as this aid in establishing new low quotations. There has been a very gradual shading of prices. For example a 24-26 fuel oil was quoted at $1 to $1.05 at the beginning of last week. The next day it was $1 flat; then 97½ cents to $1; then by gradual reductions down to 92½ to 95 cents at the close of the week. The demand is light and supplies more than ample. The demand is growing less at this time of the year and supplies are more freely offered even if refinery stocks are no larger. There is really no incentive for the buyer to place larger orders so that the bulk of the business is either for five cars or at any rate small orders, or for brief periods. The Smackover Field is reported as wholly flooded while refineries in northern Louisiana and southern Arkansas are hampered by floods if not obliged to close down entirely. Car service is badly crippled in these districts and shipments, if not the production, of all refinery products, including fuel oils, will be somewhat decreased. As yet there has been no change in the Smackover market here and there is less probability of any change as the parity of prices is against the Smackover fuel, refinery grades of higher gravities being

CHANGE IN ACREAGE VALUES FROM GASOLINE TO FUEL BASIS

Though the figure varies in different fields, experience indicates, says The Lamp, published by the Standard Oil Co. of New Jersey, that about one-third of the cost of producing oil is due to the acquisition, carrying and testing of reserve acreage acquired to maintain production. Recent reductions in crude prices have deflated the value of potential light oil production. Bonuses were paid for this acreage on the basis of gasoline rather than fuel oil prices. Operators have felt justified in paying high prices for leases in areas where a production of crude of high naphtha content was expected.

Today's crude markets are dictated by the price of fuel oil, a condition which may continue almost indefinitely. Should not the industry consider that the value of its undeveloped producing areas is on the same basis? Much of this acreage carries contractual obligations for drilling, under penalty of forfeiture. The cost of wildcatting this acreage should now be weighed against the loss of the leases.

There are many instances under present price conditions in which writing off expenditures for a lease might be less costly than drilling, regardless of the result. If it is reasonable to expect less spread than heretofore between fuel oil and gasoline prices, then the same situation will obtain in respect to the differential between light and heavy crudes.

Great quantities of crude oil have been stored by purchasing companies in order to maintain a favorable relationship with their customers, and to hold connections of value in later periods when more production might be desirable. As a result of this policy the industry now finds itself with stocks above ground greater than it needs from any viewpoint. It is carrying these several hundred millions of barrels at book values which can only be realized on a market substantially higher than the present one. A great deal of this oil was bought in past years and stored in the hope of profits to be made through its sale on a higher market.

If there were indications that the present overproduction would be temporary, so that instead of putting into storage 250,000 bbls. a day the industry would shortly be drawing on stocks, maintenance of the past practice might be justified. With so many new areas of production opening up, the hope of using any of these accumulated stocks during the balance of the year is not warranted.

It seems then that the prudent operator will leave his oil in the ground if he is not forced by contractual obligations to produce it. Never before has the industry faced prospective pools representing so great an aggregate potential production.

Back of the unsatisfactory condition of the business today are these two factors: excessive stocks and overproduction, one the result of the other. The effect of excessive stocks is felt in three ways: first, by causing direct waste through evaporation, deterioration and heavy carrying charges; second, by depressing markets through dumping in competition with current production; third, by curtailing the ability of the industry to care for any temporary overproduction without straining its financial and storage facilities.

The effects of overproduction are, accentuation of conditions above outlined through the further accumulation of stocks; and, lower prices for crude. Declines already have carried the price below cost to the average producer. By cost is meant expenses including depreciation, depletion and maintenance of production as distinguished from bare operating expense.

It is only through an understanding of the fundamentals now governing the industry that the individual producer can plan intelligently for the future. Once he appreciates that there are excessive stocks aboveground; that the present overproduction may be of indefinite duration; that many leases acquired on a basis of past gasoline prices are worth much less on the present fuel oil basis; and that the drilling of these high cost leases will possibly be unprofitable, then a part of the industry's difficulties will be in a fair way of solution.

in good supply at below the Smackover price of today. The coal supply is at present ample and in some mining districts large producers have signed a renewal of the Jacksonville scale with their men. The production of independent coal in the Pittsburgh district is increasing. The outlook seems to be for some settlement of the strike or at least a very general resumption of work under special agreements before any shortage develops.

Lubs Cut

Lubricating oils are still being badly cut in price in this territory by several refiners and it seems to be due to the efforts of certain producers of lubricating stocks and motor oils to break into the business on the old theory of working up the sales first and the profits later. The trouble would be to locate the starter as each accuses the other of being the cause of a condition that is described as not at all necessary at the present time as stocks are not excessive, unless it be of the lower grades. Some refiners are sold up and have bought of others to fill their orders. In the Pennsylvania Field neutrals are reported to be short in supply and high in price, selling at the same price or nearly so as bright stocks. There is no doubt of a good domestic demand from now on for both motor and industrial oils. The foreign demand has been light but foreign stocks are believed to be limited and it is thought that there will be an early improvement in the foreign buying.

California Companies Preparing Storage for New Production

By L. P. Stockman

LOS ANGELES, Calif., May 7.—The oil industry in California was visited by three destructive lightning fires in April of last year which resulted in the loss of 8,214,864 bbls. of crude, fuel oil, tops and gasoline and, while the open season for lightning has not yet closed in California, operators can feel comparatively safe for the rest of this year, especially since no losses were suffered during April. Lightning storms during 1927 were not as numerous as last year and this, together with the fact that extraordinary precautions had been taken to avert a repetition of the disaster has reduced the lightning hazard very appreciably. The freedom from any unusual disturbance during this year is particularly interesting as operators may again be forced to temporarily resort to the use of concrete reservoirs for the storage of crude oil.

Following the first of April, 1926, all of the larger companies reduced the amount of crude oil held in reservoir storage by topping it but there is still some little quantity stored in this manner. The Union has started reconstructing two of the reservoirs which were demolished by fire at San Luis Obispo last year and, while the present policy of the company is unknown, these may be utilized temporarily for the storage of San Joaquin Valley crude. Practically all of the larger marketers in the State are augmenting their storage facilities in one way or another. The Petroleum Securities and Pan American will start work shortly on twenty-four 100,000-bbl. steel tanks at Torrance in close proximity to the Pan American's huge reservoir and they should be erected soon due to the necessity of providing additional tankage to take care of additional anticipated production at Seal Beach. The California Petroleum and Shell recently enlarged their respective tank farms and, while the Standard has not yet made any move toward erecting any considerable number of new steel tanks, this may be done later if conditions warrant. The Standard has sufficient storage facilities to handle its present commitments and will probably not augment its facilities unless it is absolutely necessary.

EASTERN GASOLINE MARKET WEAK; TANK WAGON STRUCTURE FICTITIOUS

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, May 6.—The eastern gasoline market continues weak. The tank wagon market in some sections of the East is nominally as high as 19 cents a gallon, but the writer has had a difficult time in finding any service station dealer paying that price. The average quotation corresponding to the tank wagon price is 16 cents a gallon. Some service station dealers pay as much as 17½ cents. Quantity has something to do with the price paid, but there seems to be no set policy as to discounts.

Competition among the refining companies for service station business continues keen, indicating further concessions may be made unless conditions improve. Everything indicates that a reduction in the nominal tank wagon price will be made, even if for no other reason that to do away with what is actually a fictitious price structure.

Many service station dealers in New York and vicinity are extremely dissatisfied with the present order of things in the gasoline market, claiming they do not know where they stand. Pressure is put on them by various dealers offering concessions of one sort or another, and rumors are constantly going around of competitive stations getting better terms.

This situation certainly does not indicate a healthy market and it would not be surprising that, unless unexpected changes occur in the general outlook, the tank wagon price throughout the East would go much lower.

Kerosene

The kerosene market is soft. Water white is available in tank cars at eastern seaboard refineries for 7 cents, a recession of one-half cent in the past week.

Gas and Fuel Oil

Gas oil is steady at 5¾ cents, while fuel oils are also relatively firm. The relative steadiness in fuel oils is attributed to good consumption, coupled with small tank car shipments from the west and lack of tanker capacity, which are restricting shipments into the Atlantic Seaboard territory.

Lubricating Oils

The lubricating market has turned weak. Concessions of one-quarter to one-half cent have been made in the domestic market by refiners. This is largely because of the lower crude oil prices. Industrial demand has fallen off somewhat, but this decline in consumption has been more than offset by increased automotive demand.

Pale paraffin oil is now available at local refineries in bulk for 11¾ cents a gallon for "25" oil and 7¼ for "28." Red paraffins range from 9¾ for 200 viscosity to 12¾ for 285 viscosity.

Paraffin Wax

Paraffin wax of higher melting points continues to show wekaness. Further concessions were made to jobbers, refiners reducing melting points from 125 up one-eighth cent. Refined wax of 120-122 a.m.p. remains at 3⅞, 125-127 is cut to 4 cents, 130-132 to 4⅝ and 135-137 to 4⅞ cents.

Petrolatum

Petrolatums also continue to give ground. Dark green is readily available at 1¾, amber at 3¼ and extra amber at 3⅝, all quotations being for carload lots, in barrels. Although cream and lily white have held more steady, snow white is now down to 8 cents.

Export Market

Although the oil export demand at this port appears good, prices are yielding all along the line. Current shipments are largely on previous contracts, and new business is being restricted somewhat by this lower tendency.

No further cuts in export gasoline or kerosene have been recorded, but lubricating oils have been reduced an average of 1 cent. Steam refined "600" is now 18 cents, delivered in barrels, while 635 steam refined and 650 steam refined are bringing 20 and 22 cents, respectively.

Bright stock for export has also been cut, 135 light being 42 cents and 135 dark 40 cents, these prices representing a reduction of 2 cents.

Of the principal export grades of lubricating oil, 630 Pennsylvania flash, 600 Warren E and 600 Oil City E were the only ones not reduced in price.

The demand for bulk oil is lagging somewhat. The only bulk shipments reported during the week was one of lubricating oil to Belgium. This cargo included pale spindle oil, red oil and special cylinder oils.

Exports of lubricating oil in barrels were fairly large, due to several big consignments to Italian ports. Shipments of refined wax were also heavy.

In the cased oil department, a consignment of 110,000 cases of kerosene to China was the feature of the week.

Petroleum asphalt shipments were lower, amounting only to 317 tons, against 454 the preceding week and 1,235 tons two weeks ago.

Refining Oil Abroad

The tendency on the part of foreign countries, using a large amount of petroleum, to build up home refining is one over which American exporters of petroleum products may well ponder. In the first quarter of 1927, British imports of crude oil increased 46 per cent compared with the first quarter of 1926, while imports of petroleum products declined 6 per cent.

This tendency has doubtless affected the American market for refined products somewhat, and it is believed will continue. The share of the United States in British imports in the period in question declined from 66 to 61 per cent of the total. Features of the import trade were the heavier imports of crude oil from Persia and increase in receipts of Russian oil.

Great Britain is not the only foreign country, representing a big oil export market, nurturing a refining industry of its own. France and other countries are following the same policy. In Spain a leading oil marketing company is manufacturing its oil products in a native plant, instead of importing them from the United States.

The following table shows principal exports of petroleum and petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
Gasoline:	May 4	Apr. 27	Apr. 20
Bulk	.....	4,701,228	4,137,713
Cases	835,100	474,360	970,650
Kerosene:			
Bulk	.....	1,823,934	3,460,009
Cases	1,736,990	1,042,000	1,583,990
Lubricating oil:			
Bulk	1,609,692	.....	2,273,460
Barrels	2,459,250	425,250	1,131,500
Cases	655,560	21,550	172,920
Lubricating grease:			
Barrels (lbs.)	697,950	148,950	1,250,100
Paraffin wax:			
Bags (lbs.)	1,228,260	463,540	1,160,720
Barrels (lbs.)	295,450	606,100	236,075
Petroleum asphalt:			
Barrels (tons)	317	454	1,235
Crude oil:			
Bulk	.....	580,356	.....

The foregoing figures include shipments of 500 bbls., 1,000 cases, or over.

Tanker Charter Market

The oil tanker charter market continues very dull. The only fixture reported during the week was for the Russia-United Kingdom trade for 24 consecutive voyages, beginning early in 1928. This indicates a scarcity of vessels, and it is possible the present dullness is because most shippers are booked up, and not to lack to cargoe. Another good sign is that rates are holding relatively firm.

The only possible source of surplus tonnage is in the new vessels about to be launched in foreign and domestic shipyards. It is not yet known whether these will find ready engagement or not.

Oil Receipts

Receipts of crude and refined oil at Atlantic Coast ports for the week ended May 4 are estimated at 3,956,000 bbls., a daily average of 565,000 bbls. This compares with 3,590,000 bbls., or 513,000 bbls. daily, for the week ended April 27.

Larger imports were the feature of the week, these totaling 1,275,000 bbls., averaging 182,000 bbls. a day. Mexico was largely responsible for the gain, accounting for a daily average of 113,000 bbls., while South American sources supplied a daily average of 69,000 bbls.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the past three weeks; also monthly record for the past 12 months (figures in barrels):

	Week Ended		
	May 4	Apr. 27	Apr. 20
Gulf Coast	313,000	308,000	490,000
Pacific Coast	70,000	118,000	152,000
Mexico	113,000	48,000	79,000
South America	69,000	39,000	43,000
Total	565,000	513,000	764,000

Daily Averages by Months

1927:	Gulf	Pacific	Mexico	S. Am.	Total
April	388,000	93,000	69,000	61,000	611,000
Mar.	345,000	103,000	36,000	81,000	565,000
Feb.	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926:					
Dec.	363,000	57,000	49,000	61,000	530,000
Nov.	335,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	299,000	98,000	63,000	58,000	518,000
Aug.	320,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

LOUISIANA PIPE LINE WASHED OUT BY FLOOD

SHREVEPORT, La., May 9.—Two pipe lines of The Texas Company crossing the Red River at Ardis, La., just out of Shreveport, were washed out the past week by the swift current. One, a 10-inch, was the company's main line from the Smackover Field of Arkansas. The other, an 8-inch, was an emergency line from Smackover and never had been used. The Texas Company has borrowed the Shreveport-El Dorado Pipe Line Co.'s line until it can re-lay the washed out pipe.

The Magnolia Gas Co. also lost three gas lines crossing Red River north of Shreveport and several lines of the Southwestern Gas & Electric Co. were washed out. Lines of other companies still are intact.

OIL ROYALTY TAXABLE SAME AS REAL ESTATE

AUSTIN, Tex., May 7.—Oil royalty interests are subject to assessment and taxation the same as real estate, the Supreme Court held in an opinion by Associate Justice Thomas B. Greenwood, answering certified questions in the case of Lee Hager and others vs. D. W. Stakes, tax collector of Orange County.

The decision affects the revenues of every county in the State having an oil field or a prospective one. The taxes are payable in the county in which the land is situated.

OIL CITY MARKETS

OIL CITY, Pa., May 7.—The demand for gasoline and naphtha in the Pennsylvania refined district has not picked up yet. Actual consumption is great. The weather is good for motoring. Nearly everyone now has his car in use and fairly long trips are in the week-end programs of the average family. The trouble is that too much gasoline is being manufactured. Kerosene was a little weaker. Neutrals are very strong and scarce. Wax is very weak and lower in price with no signs of anything encouraging in sight. Fuel oil is somewhat weaker. Cylinder stocks with no demand are practically dead. There has been very little activity in the bright stock market.

GULF COAST MARKETS

HOUSTON, Tex., May 7.—Refiners report quotations on lubricating stocks made from Gulf Coast crude as unchanged. There is a good demand with sufficient stocks on hand to satisfy the present needs. Foreign buyers are in the market, but the inquiries are based on future deliveries, in some cases as far as six months.

Iodine Color of Petroleum Products

Usual Method Modified for Control in the Manufacture of Lubricants, Giving Values Used Additively

By Arthur L. Davis
Chief Chemist, Empire Refineries, Inc., Okmulgee, Okla.

A review of the methods for determining color of petroleum products indicates that those of reasonable accuracy cover quite a short range of color quality. In the manufacture of lubricants, it is difficult to get a clear conception of color values when comparing a raw, intermediate, and finished stock, unless it is possible to have a numerical relation which is reasonably proportionate.

Original Procedure

Dr. Roy Cross has suggested a procedure based on the direct comparison of diluted solutions of petroleum products with solutions of iodine of known strength.

Exactly 1 cc. of the dark petroleum product is diluted to exactly 10 cc. with benzene and thoroughly mixed. One cc. of this solution is diluted to 100 cc. with benzene. After thoroughly mixing, this solution is placed in a carbon color tube. This is compared with a similar tube containing standard iodine solution made up with 10 grams of iodine and 10 grams of potassium iodide in 1,000 cc. of distilled water, diluted until the color matches with that of the oil under test. The iodine color obtained is that equivalent to the milligrams of iodine per 100 cc. of the matched solution.

It is quite obvious that it would not be feasible to handle such an active and unstable iodine solution in making comparisons on the many samples necessary for regular control. It was found that the color of the various opaque petroleum products could be matched with the color glasses in the Tag-Robinson colorimeter when placed in the proper dilution by using benzol as the solvent. Consequently, in order to eliminate the use of these iodine solutions, basic comparisons were made to determine the iodine equivalent of the various Tag-Robinson color values, incidentally showing the corresponding N. P. A. and A. S. T. M. values. By this procedure, the product under examination could be brought to a dilution where the best match of color could be obtained and then the color of this solution determined directly on the Tag-Robinson instrument. By referring to the charts developed, accounting for the dilution, the resulting iodine color could be noted.

Present Procedure

Definition—The iodine color of petroleum or its products is the numerical equivalent of a matched iodine solution in terms of milligrams of iodine per 100 cc. of solution.

Scope—Crude petroleum, lubricants, and the darker petroleum products.

Solvent—90 per cent, 25 Saybolt color benzol.

Apparatus—Tag-Robinson colorimeter. One 10-cc. graduated tube. One 100-cc. graducated tube. One 1-cc. pipet.

No Dilution—Determine Tag-Robinson color. Refer to chart. Report iodine color.

(a) 1 in 2 Dilution—Measure exactly 50 cc. of benzol into a 100-cc. graduated tube. Add petroleum product until meniscus comes exactly to 100-cc. mark, exercising care to prevent any of the product touching the top of the tube above the graduations during addition. Mix thoroughly. Determine Tag-Robinson color. Refer to chart. Report iodine color.

(b) 1 in 10 Dilution—Measure exactly 90 cc. of benzol into a 100-cc. graduated tube. Add petroleum product by drops until the meniscus rises to exactly the 100-cc. mark. Mix thoroughly. Determine Tag-Robinson color. Refer to chart. Report iodine color.

(c) 1 in 100 Dilution—Measure exactly 9 cc. of benzol into a 10-cc. graduated tube. Add petroleum product by drops from a carefully cleaned glass tube until the meniscus rises to exactly the 10-cc. mark. Mix thoroughly. Transfer to a 100-cc. graduated tube. Wash thoroughly with benzol, transferring all washings to 100-cc. graduated tube. Fill with benzol until meniscus rises to exactly the 100-cc. mark. Mix thoroughly. Determine Tag-Robinson color. Refer to chart. Report iodine color.

(d) 1 in 1,000 Dilution—Measure exactly 9 cc. of benzol into a 10-cc. graduated tube. Add petroleum by drops from a carefully cleaned glass tube until meniscus rises to exactly the 10-cc. mark. Mix thoroughly. Transfer exactly 1 cc. to 100-cc. graduated tube. Fill with benzol until meniscus rises to exactly the 100-cc. mark. Mix thoroughly. Determine Tag-Robinson color. Refer to chart. Report iodine color.

By this procedure iodine colors may be obtained for all products handled in the course of manufacture which have a reasonably accurate, directly proportional significance. In other words, a crude oil of 5,000 iodine color is 25 per cent darker than a crude oil of 4,000 iodine color.

Interpretation

A typical tabulation showing processing, yields, and color is shown in Table A and Table B. Table A concerns the color control in the processing of lubricants from pressed distillate. The three columns under yields give these values at a glance on their respective bases. The first column under iodine color contains the theoretical values calculated from the actual value on the pressed distillate, in conjunction with the yields of various intermediate products. The use of the

ADVANTAGES OF METHOD

The iodine color method for the darker petroleum products, modified so that values may be obtained using the Tag-Robinson colorimeter instead of direct comparison with iodine solutions of known concentration, gives values which may be used additively.

The progressive color change in the manufacture of low viscosity lubricants from pressed distillate or low pour point distillate and the higher viscosity cylinder stocks from crude oil may be obtained on a percentage basis.

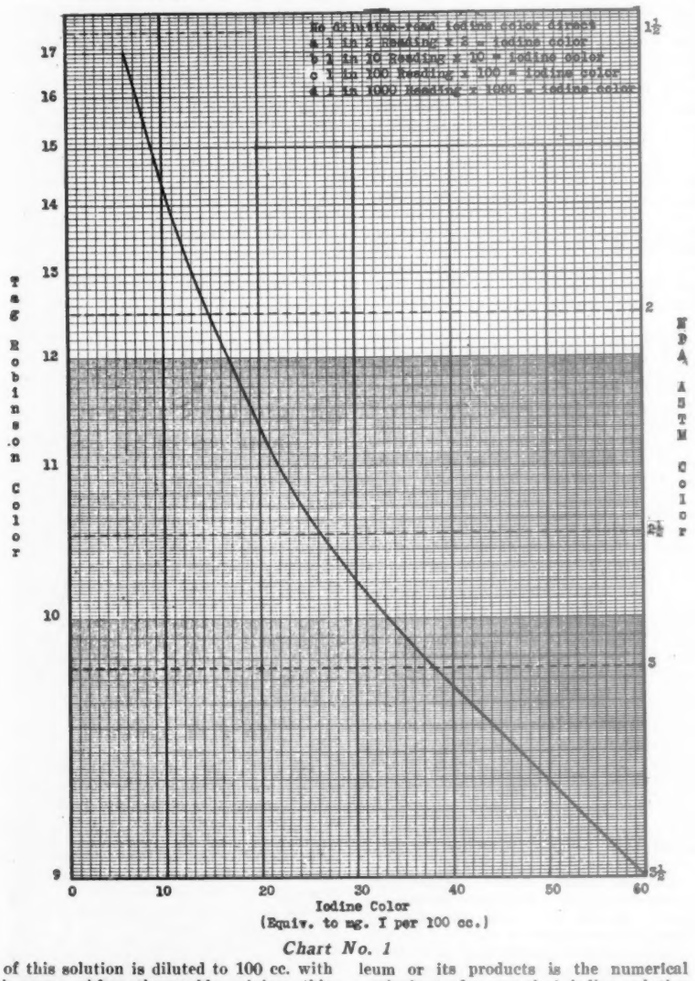

No dilution-read iodine color direct
a 1 in 2 Reading x 2 = Iodine color
b 1 in 10 Reading x 10 = Iodine color
c 1 in 100 Reading x 100 = Iodine color
d 1 in 1000 Reading x 1000 = Iodine color
Tag Robinson Color
NPA ASTM Color
Iodine Color
(Equiv. to mg. I per 100 cc.)

Chart No. 1

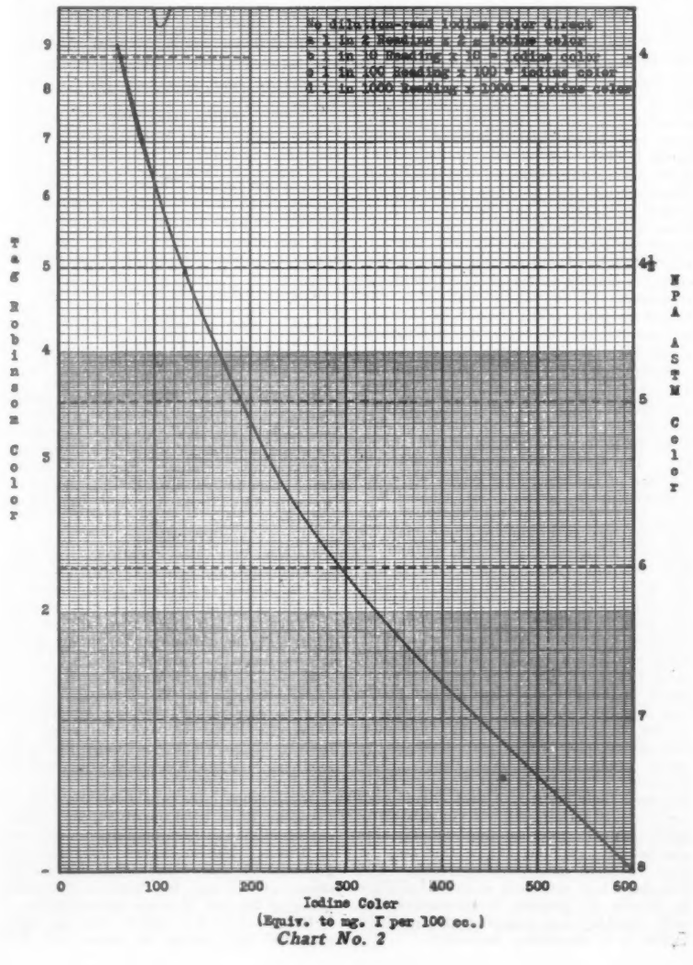

No dilution-read iodine color direct
a 1 in 2 Reading x 2 = Iodine color
b 1 in 10 Reading x 10 = Iodine color
c 1 in 100 Reading x 100 = Iodine color
d 1 in 1000 Reading x 1000 = Iodine color
Tag Robinson Color
NPA ASTM Color
Iodine Color
(Equiv. to mg. I per 100 cc.)

Chart No. 2

actual values in conjunction with the theoretical values gives the per cent color change. From the actual colors obtained the per cent of the original coloring matter and their intermediate and finished products may be determined.

Table B contains the same type of information covering the manufacture of the various cylinder stocks. The usual dilutions in processing are not included in order that the examples given might be simplified as far as possible. Color values on naphtha solutions would be inversely proportional to the naphtha content.

Application

Each individual operation will normally yield products of a definite color. As long as there is no direct evidence of color loss, as shown by applying the procedure, it is reasonable to assume that there will be found certain values at each step in the normal processing. The variation from this normal processing, as indicated numerically and possibly on a per cent basis, will give the exact extent of improvement or deterioration should any change exist. The procedure is particularly adaptable in checking operations periodically where it is not deemed advisable to use the procedure regularly.

Acknowledgment

Acknowledgment is made to E. H. Harwig for his assistance in determining the iodine colors equivalent to the Tag-Robinson color values.

TABLE A—COLOR CONTROL-LUBRICANTS FROM PRESSED DISTILLATE

Product	Yields basis			Iodine color			
Process	Pressed dist.	Lub. dist.	Tr. lub dist.	Theor.	Actual	% color change	% orig. color
Pressed distillate	100.0	...	...	120	120	..	100.0
Distillation—fire and steam							
Lub. distillate	20.0	100.0	...	600	750*	—25.0	125.0
Treat .. lbs. 93.19% H_2SO_4/50 gal. bbl.							
Tr. Lub. dist.	16.0	80.0	100.0	750	100	—86.7	13.3
Filter‡ ... gals./ton .... mesh (source) fuller's earth							
Lub. (finished)	14.4	72.0	90.0	833	35†	—95.8	4.2

*Color increase due either to excessive still temperatures or insufficient steam or both.
†Corresponds to 3 N. P. A. ‡Contact or percolation.

TABLE B—COLOR CONTROL-LUBRICANTS FROM CRUDE

Product	Yields basis			Iodine color			
Process	Crude oil	S. R. C. S.	T. S. R. C. S.	Theor.	Actual	% color change	% orig. color
Crude oil	100.0	...	...	4,000	4,000	..	100.0
Distillation—fire and steam							
S. R. cylinder stock	25.0	100.0	...	16,000	14,000	—12.5*	87.5
Treat† .. lbs. .... % H_2SO_4/50 gal. bbl.							
T. S. R. C. S.	18.75	75.0	100.0	21,333	4,000	—81.4	18.6
Filter‡ .... gals./ton .... mesh (source) fuller's earth							
T. F. S. R. C. S.	11.25	45.0	60.0	35,555	600§	—83.2	16.8

*Portion of color carried overhead in distillates.
†Subsequent values on cylinder stock basis.
‡Petrolatum separation omitted since color values normally unchanged.
§Corresponds to 8 N. P. A. or 1 Tag-Robinson

NATURAL GAS MEN TO MERGE WITH A. G. A.

(Continued from Page 38)

convention. That the natural gas industry views the present in a somewhat different manner than does the oil industry was indicated by Ralph W. Gallagher, president of the East Ohio Gas Co. and president of the association, in his address when he stated that "The natural gas industry, which this association represents, is in a very satisfactory and promising position."

Mr. Gallagher paid especial tribute to the work of the technical committee of the association, of which Howell C. Cooper is chairman, and said the work accomplished by this committee in the standardization of orifice meter measurements alone will be of inestimable benefit to the gas industry as a whole. With the Bureau of Standards and the Bureau of Mines, the committee has carefully calibrated orifice plates under varying conditions and these are to be the standard plates in all future orifice meter work.

Mr. Gallagher reviewed the work of the association during the past year and pointed out the necessity of the industry as a whole keeping abreast of changing conditions. He said it was essential for natural gas men to recognize that they now must develop real salesmanship if they expect to maintain a satisfactory income.

While the election of officers and directors will not be held until Thursday, it is almost certain that N. C. McGowen, president of the Palmer Corp. of Shreveport, La., and present vice president of the association, will be elected president. Samuel W. Meals, president of the Carnegie Natural Gas Co. of Pittsburgh, Pa., and L. K. Langdon, counsel of the Union Gas & Electric Co. of Cincinnati, are among those prominently mentioned for election as vice president.

INCREASED RECOVERY UNECONOMIC, ONE VIEW

(Continued from Page 33)

tailing a heavy immediate investment and an absolute loss of money. Artificial aids to oil recovery are only justified when they increase the ultimate yield from a sand force heavy crude production when it is needed for an emergency.

"The air lift will probably mean a tremendous overproduction of crude this summer—worse than we have yet witnessed—and a terrific decline in production when we have stored up our oil above ground. It means instability because it means wider swings in crude oil production and prices.

"The larger oil producers are using the air lift in cases where competition forces it, but beyond that they are paying more attention to building up stable reserves than to forcing current crude oil production. They would rather spend $10,000,000 in building up a settled supply of crude than to build storage in a temporary flush field.

"For that reason, with a big oversupply of crude in sight some of the leading oil companies are buying acreage and putting in pipe lines in areas such as West Texas. The overproduction will not stifle activity in West Texas, nor will it discourage the building of pipe lines into that area, is as much as the district is known to be prolific of shallow-sand production.

"They calculate that it is cheaper to develop this shallow-sand output than to pay $1,000,000 for leases, $100,000 per well, and $10,000,000 more for storage facilities when the flush oil comes in from the 4,000-foot sands.

"West Texas, for instance, with its big potential shallow-sand output could conceivably compete with the known Mid-Continent fields in supplying crude and force the price of the latter down still further, if necessary. You must keep in mind cheap crude is an asset to the refiner and marketer, the latter having to meet competition of coal and other substitutes for oil. For this reason if there is any cheap oil production in sight, the big oil operator will go after it. This is the situation in West Texas at present.

"No doubt some wildcatting operations in West Texas will shut down, due to discouragement or financial handicap under present conditions, but at every find there will be a rush of new operators.

"West Texas has its own shipping port of Corpus Christi, and will be connected with it by pipe line in the near future. This will make West Texas crude oil of further immediate value to the refiner.

"In view of these conditions, I expect a big boom in West Texas development during the next few months, irrespective of the general oil situation.

"The domestic production of crude oil in the United States could be pushed to 2,750,000 bbls. a day by the end of summer if that amount of oil were required. Not only could the air lift be applied further, but shut-in production could be released; but, this does not necessarily mean that output will be pushed to that figure.

"Perhaps the users of air-lift will agree to discontinue this method of forcing unneeded production on the market; perhaps crude oil prices will be cut further until more settled production is stifled. But then, again, low crude oil prices may encourage the use of the air lift on the part of small producers.

"At any rate, I expect that the Seminole oil field will fall off 100,000 bbls. in the next 90 days and that a year from now the field will be producing about 30,000 bbls. daily. That may help somewhat.

"Government regulation would be a terrible boomerang to any one advocating it. It would bring about a shortage of oil and the highest gasoline prices we have ever witnessed."

ROCKY MOUNTAIN AREA

(Continued from Page 56)

& Gas Co. has a well drilling on a wildcat structure at 1,400 feet.

Runs From the Fields

Wyoming	
Salt Creek	45,360
Teapot	890
Big Muddy	2,820
Grass Creek	2,660
Elk Basin	950
Greybull	10
Rock River	3,020
Rex Lake	170
Lance Creek	690
LaBarge	120
Poison Spider	170
Osage	330
Hamilton Dome	1,560
Lander	80
Byron	50
Lost Soldier	3,610
Ferris	70
Simpson Ridge	60
Montana	
Cat Creek	2,370
Lake Basin	190
Sunburst	12,500
Colorado	
Walden	180
Florence	700
Moffat	2,385
Fort Collins	3,410
Tow Creek	920
Boulder	25
Rangely	100
New Mexico	
Hogback	760
Rattlesnake	4,255
Artesia	1,900
Total	91,555

PETROLEUM TECHNOLOGY

The Scientific Principles of Petroleum Technology, by Gurwitsch, as translated by Harold Moore, has just come from the press of D. Van Nostrand Co. The price of the book is $8.

Ever since the appearance of the first German edition of this book in 1913 it has stood alone as a guide and source of information to those interested in the scientific phases of the petroleum industry, so this English translation from the second German edition cannot fail to be appreciated by all technical men in the industry.

The chemical composition of petroleum, the chemical behavior of the hydrocarbons and the physics are discussed in the first 193 pages. Some of these subjects include the action of various elements, such as oxygen, sulphur and nitrogen; also the use of acids and other compounds. Dehydrogenation, polymerization and the action of light are included. The importance of specific gravity, viscosity, vaporization, conductivity of heat, and many other physical properties, is shown in the thorough study that is presented of the crude oils of the world.

The second part of the book is devoted to manufacture. Here the different forms of distillation are reviewed, the scientific principles are explained and practical applications made. Under the refining section may be found much information about the use of acids and alkaline materials.

The final section treats of the petroleum products and their properties. The antiknock property of some gasolines is discussed; to this may be added the burning qualities of illuminating oils and a study of lubrication, simply for the purpose of illustrating the nature of the information.

Fireproof House at Texas U. to Store Geological Samples

HOUSTON, Tex., May 7.—The geological department of the University of Texas at Austin has secured a fireproof building, located on the Little campus, for the purpose of storing cores and formation samples taken in the various producing fields as well as from wildcat wells in Texas. The department has more than 30,000 of these formation samples for use by geological students and oil operators seeking information.

The geological department invites oil men to send in samples of formation tests for permanent preservation.

The department is issuing a bulletin, entitled the Midway Formation in Texas, prepared by Helen Jeanne Plummer. The Midway is the basal formation of the Eocene, coming just above the Cretaceous. It lies at the surface in Texas over a narrow belt of country extending from northeast Texas to the Rio Grande in southwest Texas. The formation consists of clays, sands and limestones. In this formation the foraminifera, a group of small shells, are notable abundant.

The object of the report is to fully describe and illustrate these small fossils so that they may be of the greatest service to geologists and others in identifying this formation, both at the surface and where it is encountered in wells. The report on these fossils, consisting of 206 pages, is fully illustrated by 15 plates and several maps and text figures.

Twelve of the plates are from drawings made by the author depicting the beautifully preserved small shells. The remaining three plates are from enlarged photographs of some of the fossils. The report contains description and illustration of 100 species. This extensive publication is the result of several years' work and is contributed by the author as an aid in making known the geology of Texas.

GEOLOGICAL SURVEY BULLETIN ON MONTANA

The Department of the Interior, in announcing the publication of Geological Survey Bulletin 786-B, "The Geology of the Cat Creek and Devils Basin Oil Fields and Adjacent Areas in Montana," calls general attention to this issuance of another contribution to the knowledge of our oil and gas resources. This report, by Frank Reeves, discusses the geology, oil field problems and future oil possibilities of an area of about 2,700 square miles in Petroleum County and adjacent portions of Fergus, Garfield and Musselshell Counties, in central Montana.

Of especial interest to the geologists are the description of the Cat Creek and Devils Basin oil fields and the discussion of the part played by faults in the accumulation, migration and yield of oil in the Cat Creek Field. The larger structural features of central Montana are described in the text and are shown in a structure contour map.

The report is illustrated with several figures and plates and is accompanied by a colored map which shows the distribution of the rock formations that crop out in the area between the Cat Creek anticline and the Devils Basin Dome and portrays the structure of the First Cat Creek sand by means of structure contours.

FREEMAN WITH NORTHLAND OIL

CHICAGO, May 7.—E. J. Freeman, Chicago representative of the Security Petroleum Co. of Kansas City, Mo., has joined the Northland Oil Co. of this city, succeeding T. F. Thompson, who resigned to establish the Chicago Oil Marketing Co. In addition to light oils, Mr. Freeman will include in his department the sale of heavy oils.

REFINING AND MARKETING

City Continues To Have Trouble With Its Station

LINCOLN, Neb., May 7.—This city continues to have trouble with its municipal gasoline station.

It figured prominently in the city election last week and apparently will continue the center of things politically.

Last month it was discovered that the city commissioner in charge of the station was paying premium prices for the gasoline and lubricating oils sold at the station. The explanation given was that most oil companies would not sell to the city which retailed gasoline under the selling costs of several marketing concerns operating in this city. Due to this condition, it was explained, it was necessary to buy the gasoline and lubricating oil supplies from sources which sold only at premium prices.

This explanation failed to satisfy the city council and the city attorney was authorized to make the purchases. The latter had difficulty in lining up a source of supply and the station recently has been closed several times due to that fact.

Unable to interest any of the regular oil companies in its proposition, the city council during the past week closed a contract with a Omaha jobber who has gained considerable prominence in that city due to his price cutting campaigns.

The contract entered into with the city council, in view of the recent concern regarding the payment of premiums for gasoline, is interesting. The council agrees to pay 43 cents a gallon for lubricating oils. In regard to gasoline, the price shall not exceed the "lowest wholesale price as from time to time established by the company." Thus, the seller determines the price on which the contract is based. The city agrees to buy from the jobber exclusively. The seller protects himself in the matter of delivery with the provision "that the city shall not hold said company for failure to deliver said gasoline in case of strike, flood, fire or such unforeseen conditions which are beyond the control of the seller."

L. V. NICHOLAS ELECTED PRESIDENT OF I. O. M. A.

CHICAGO, May 7.—L. V. Nicholas was elected president of the Independent Oil Men of America at a meeting of the new board of directors held here this week. The meeting completed the reorganization plans started at the spring convention held here in March. At the convention it was decided to dissolve the National Petroleum Marketers Association and merge its membership with the Independent Oil Men of America which had been the advertising branch of the national association. The election of Mr. Nicholas means he will continue as head of the new organization. Miss Eva Arnstein was appointed secretary and treasurer of the Independent Oil Men of America and will have charge of the office.

The following trustees were also selected: William F. Burke, Kentucky Independent Oil Co., Covington, Ky.; A. L. Lommel, Bartles-Shepard Oil Co., Waterloo, Iowa; A. W. Long, Long Oil Co., Manhattan, Kans.; C. L. Maguire, Northland Oil Co., St. Paul, Minn., and C. S. Rosenthal, Apex Motor Fuel Co., Chicago. The principle of exclusive right of members to the use of the emblems and insignia of the organization and the other benefits of the association in their territory was recognized and will be applied to all new members who will be assigned counties in which they will be exclusive. Where there are overlapping memberships this will be adjusted later.

There will be no change in dues. The coupon exchange will be continued and a deposit bond required to insure against contingent liabilities; also a bond to be forfeited if substitutes are sold for the real article. The present plan is to spread the organization over unoccupied territories.

SIXTH ANNUAL CONVENTION, ASSOCIATION OF NATURAL GASOLINE MANUFACTURERS

May 24, 25, 26, 1927, Mayo Hotel, Tulsa

Tuesday, May 24

MORNING SESSION

Address of Welcome—F. L. Chase, vice president Lone Star Gas Co., Dallas, Tex.

Annual Address—E. L. Peck, president Association of Natural Gasoline Manufacturers; general manager Empire Gasoline Co., Bartlesville, Okla.

Secretary-Treasurer's report.

Appointment of nominating committee for officers and directors.

Dutch Lunch—Compliments associate members of the Association of Natural Gasoline Manufacturers.

AFTERNOON SESSION

Economics of the Natural Gasoline Industry—J. C. Chatfield, staff writer, National Petroleum News.

The Research and Educational Program—D. E. Buchanan, chairman research committee, Association of Natural Gasoline Manufacturers, and vice president Chestnut & Smith Corp., Tulsa, Okla.

The Natural Gasoline Industry of California—Paul D. Barton, president California Natural Gasoline Association; Barton-Manning-Warner, Alhambra, Calif.

NIGHT SESSION

Stag Smoker—Compliments of associate members of the Association of Natural Gasoline Manufacturers.

Wednesday, May 25

MORNING SESSION

Paper: The First Law of Nature—D. J. Wallace, safety director Mid-Continent Oil & Gas Association, Tulsa, Okla.

Paper: The Portable Plant—S. S. Smith, superintendent gasoline division, Roxana Petroleum Corp., Tulsa, Okla.

Paper: Co-operation Between Plant and Office—C. L. Swim, manager insurance department, Skelly Oil Co., Tulsa, Okla.

Photograph will be taken immediately following this session.

AFTERNOON SESSION

Paper: Water Treatment—F. B. Good, The Texas Company, Breckenridge, Tex.

Paper: Fire Prevention as Applied to the Natural Gasoline Industry—E. T. Ingalls, manager Oklahoma Inspection Bureau, Oklahoma City, Okla.

Paper: Lubrication—Speaker to be announced later.

Open Forum.

Report of Nominating Committee and Election of Officers.

ANNUAL BANQUET, 7 P.M.

Toastmaster and speaker to be announced later.

Thursday, May 26

This day will be given over largely to the discussion of natural gasoline and its value in motor fuel. Dr. G. G. Brown, professor of chemical engineering, University of Michigan, and head of the association's research program, will summarize his year's work with natural gasoline, and in addition present some new thoughts on the subject. Other speakers will be announced later. A Dutch lunch will be served at noon, compliments of associate members of the Association of Natural Gasoline Manufacturers.

Twenty Oil Companies Market 98 Per Cent California Gasoline

Twenty companies market substantially all of the gasoline sold in California, according to data based on state reports obtained in connection with the collection of the state's 2-cent gasoline tax. The report for March (latest available) shows that the first 20 companies sell in excess of 98 per cent of the total. The remaining 2 per cent is sold by 30 small concerns, several of which sold less than 500 gallons during March.

Of the 20 leading companies, the five largest (Standard, Shell, Richfield, Union and Associated), in March sold 77 per cent of the total. Following is a list of the first 20 companies and their gasoline sales in March:

Company—	March Gallons
Standard Oil Co. of California	52,870,892
Shell Co. of California	34,261,512
Richfield Oil Co.	31,609,026
Union Oil Co. of California	26,369,781
Associated Oil Co.	22,164,684
California Petroleum Corp.	12,876,180
Pan American Petroleum Corp.	10,927,121
General Petroleum Corp.	7,724,687
Marine Refining Corp.	4,902,386
Wilshire Oil Co., Inc.	4,646,993
Western Oil & Refining Co.	1,431,307
Vernon Oil Refining Co.	1,365,435
Gilmore Oil Co.	774,915
Seaside Oil Co.	759,248
MacMillan Petroleum Prod. Co.	524,781
California Naphtha Products Co.	382,229
Julian Petroleum Corp.	369,790
Navy Oil Co.	334,250
Rio Grande Oil Co.	289,984
Total	215,743,899

California gasoline tax during the first quarter of 1927 totaled $4,332,566, gain of 9.69 per cent over the $3,950,002 for the corresponding period of 1926. Sales in the quarter were 218,816,493 gallons. Fourteen companies reported more than 1,000,000-gallon sales.

JOHNSON OIL ENTERS ST. LOUIS

CHICAGO, May 7.—The Johnson Oil & Refining Co., extensive distributors and marketers of this city, with a refinery at Cleveland, Okla., are building their first bulk station in St. Louis. This plant will probably be in operation by June 1. E. J. Eddy of the Detroit office will be in charge. The Johnson Oil & Refining Co. is making important additions to its storage facilities at the refinery.

GRANT EXTENSION IN MID-CONTINENT CASE

The Interstate Commerce Commission last week granted a 30-day extension in the date on which new rates will become effective from Mid-Continent refining centers to points in Western Trunk Line territory. The rates were to become effective May 20, and the date is now extended to June 20. The new rates are the result of an Interstate Commerce decision announced last fall in which the rate differentials between Mid-Continent refining groups were changed resulting in substantial advances from most points except Kansas and the Kansas City, Mo., group of refiners.

No action has been taken by the Interstate Commerce Commission relative to the numerous petitions which have been filed seeking to have the case reopened. The Northeast Oklahoma and the North Texas groups of refiners have been especially active. Support of numerous organizations outside the oil business has been enlisted in the fight to have the case reopened. Action in Federal courts is expected in the event the Interstate Commercial Commission refuses to consider further the issues involved in the case.

VIRGINIA OIL MEN

The annual convention of the Virginia Independent Oil Men's Association will be held at Richmond, Va., June 13 and 14. All sessions will be held at the Murphy Hotel. W. M. Eller of 511 Union Trust Building, Petersburg, Va., is secretary of the association.

A. O. M. A. HEAD HAS INTERESTING CAREER

TOLEDO, Ohio, May 7.—A. S. Close, who has just been elected president of the American Oil Men's Association, is a well known business man of this city whose oil interests cover more than one phase of the business.

Mr. Close is secretary and general manager of the Hickok Producing & Refining Co., with headquarters here. This company was started in 1912 by Mr. Close and his associate, A. S. Hickok, with an initial investment of $6,000. The operations of the company have expanded rapidly so that now its authorized capitalization is $5,000,000. The company owns 250 bulk and filling stations in northern Ohio and Michigan. The company also is interested in producing properties and operates four absorption natural gasoline plants in Texas.

In addition to his oil interests, Mr. Close is connected with other business enterprises. He came to this city when he was 20 years old as a buyer for a large dry goods store. Previously, he had been associated with his father in the drygoods business at Carey, Ohio. After being engaged in the drygoods business for several years, he became interested in coal mining. He was successful in his operations, selling his holdings for a large profit.

Later he traveled around the world for two years. While in Europe he observed some tests being made in compressing gases to obtain liquids. When he returned to this country he built one of the first compression gasoline plants in Ohio.

Brief Items for Plant Operators

DOHERTY FILES SUIT AGAINST UNIVERSAL

CHICAGO, May 9.—The Doherty Research Corp. of New York has filed suit in the United States District Court against the Universal Oil Products Co., alleging infringement of patents in the operation of a cracking process. The plaintiff company is the owner of the patent rights covering the operation of the Doherty cracking process now in operation at three Oklahoma refineries and one Texas refinery of the Empire Refineries, Inc. Both the Doherty Research Corp. and the Empire Refineries, Inc., are subsidiary organizations of the City Service Co. of New York.

The patents named in the petition filed here are the Sherman patents No. 1,260,584 and No. 1,288,711 and the Coast patent No. 1,585,233. An injunction with the usual relief in such cases is asked.

Patent No. 1,260,584 was filed April 24, 1916, and was issued March 26, 1918, to Layton O. Sherman. The second Sherman patent was filed November 15, 1917, and issued December 24, 1918. Patent No. 1,585,233 was filed July 14, 1919, by John W. Coast, Jr., and issued May 18, 1926. Mr. Coast developed a cracking process which was in operation for several years at the Okmulgee, Okla., refinery of the Empire Refineries, Inc. Several units of the process are still in operation at the West Tulsa, Okla., refinery of the Mid-Continent Petroleum Corp. He was formerly general superintendent of the Empire and Mid-Continent (Cosden) refineries.

The Doherty corporation today presented to the court a motion for interrogatories, citing some 30 patents owned by the company.

The filing of the case has occasioned considerable discussion, due to the fact that the Universal Oil Products Co., which is the owner of the Dubbs cracking process, filed suit against the Empire Refineries, Inc., about a year and a half ago. The suit was based on the alleged infringement of the Dubbs patents at the Empire refineries in connection with the operation of the Doherty cracking units. This case has never been brought to trial.

About two months ago, the Empire Refineries, Inc., contracted with the Universal company for the installation of four Dubbs units at two of its refineries. These units are now in the process of construction.

INSTALL DUBBS UNIT

SHREVEPORT, La., May 9.—A thorough overhauling, including the installation of a new, large expansion chamber on the Dubbs unit, is being given the cracking plant of the Shreveport Producing & Refining Co. The units, one Dubbs and one Jenkins, have been shut down since March 1. The new Dubbs expansion chamber is 40 feet long and 10 feet in diameter and will increase the length of the run materially.

NEW EQUIPMENT FOR COUTTS

CHATHAM, Ontario, May 6.—L. R. Olsen, president and general manager of the Alberta Refining Co. of Coutts, Alta., has returned from the eastern states, where he purchased new equipment for the company's plant, recently damaged by fire.

SKELLY PLANT EXTENSION

The Skelly Oil Co. is building two pipe stills at its Eldorado, Kans., refinery. Each unit has a capacity of 3,000 bbls. daily. The units when completed will be a part of the skimming plant. Winkler & Koch are doing the engineering work in connection with the installations.

NEW JERSEY STANDARD EXPLAINS CURTAILMENT OF CRACKING UNITS

Not long ago a newspaper in Elizabeth, N. J., explained a reduction in forces at the Bayway refinery near by as being due to the discovery of a new process for making gasoline at an extremely low cost. The story was fantastic and for that reason was widely circulated—much more so than the true, if less interesting, explanation given by the management of the Standard Oil Co. of New Jersey.

Oddly enough for an industry which has moved forward so rapidly, the layoff was not brought about by any improvement in methods, but by a temporary abandonment of the latest machinery of refining and the return to earlier principles.

The situation is so unusual as to merit a brief review of the conditions leading to the use of cracking processes and the reasons for their becoming idle.

Let us start the story about a quarter of a century ago, says The Lamp, published by the Standard Oil Co. of New Jersey. The year 1900 may be considered to have marked the turning point between two important eras. Up to that year the refiner's efforts were bent toward the production of the maximum amount of kerosene. In 1900, then, he obtained 58 per cent of kerosene and 9 per cent of gasoline from the total crude oil run. That probably marked the maximum development in this direction.

The industry was only 40 years old, but it had built a very large volume of business with kerosene oil as its major product. Processes in use at the opening of the present century involved cracking of the heavy residuals at atmospheric pressure. This gave a relatively small amount of gasoline as compared with the production of kerosene.

Already, however, the wider use of electricity and artificial gas for illumination was superseding the oil lamp, and a healthy demand for automobile fuel gave some indication of its future importance. To meet the increasing demand for gasoline, it became necessary for the refiner to take the more volatile fractions from his kerosene.

Take another milestone from which to appraise changes in the industry. By 1914, when Europe went to war, the market's demands had changed to such an extent that production of kerosene was but 24 per cent and that of gasoline 26 per cent of the total crude oil refined. The refiner had come to run his business primarily for supplying motor fuel, in the course of which he had been compelled to increase greatly the amount of crude oil run. A necessary by-product was a large percentage of heavier products for which there was not a ready market. Gas oil was becoming a real burden on the industry.

Start of Cracking

The situation had been foreseen and two years earlier the first commercial application of cracking to produce gasoline from gas oil at super atmospheric pressure had been made. Three years later, in 1915, the Standard Oil Co. of New Jersey started the fires under its first Burton still. As the demand for gasoline continued to broaden, more and

(Continued on Page 163)

JOINS WICHITA FIRM

W. E. Perdew, who recently resigned as superintendent of the Derby Oil Co.'s refinery at Wichita, Kans., has become associated with the Winkler-Koch Engineering Co. of that city. The company specializes in bubble towers, tube stills and flash stills used in refinery operation.

AMONG THE TECHNICAL MEN

H. B. Hickman, superintendent of the natural gasoline department of the Arkansas Fuel Oil Co., is an engineer who has grown up with the natural gasoline industry, having been engaged in that branch of the industry since the building of the first plants.

H. B. Hickman

Mr. Hickman has charge of all natural gasoline plant operations of his company in Texas, Arkansas and Louisiana. His headquarters are at Eastland, Tex., although much of his work is done in Louisiana and Arkansas fields. He has been in his present capacity since 1918, when he left the Ohio Fuel Corp.

It was with the Ohio Fuel Oil Corp. that Mr. Hickman pioneered in the natural gasoline field. It was that organization which built the first gasoline absorption plants and Mr. Hickman was one of the men having charge of this work and later was made superintendent of all plants of the company in West Virginia. He was with the Ohio Fuel Oil Corp. from 1909 to 1918.

Previous to that, Mr. Hickman was connected with the American Oil & Development Co. and the South Penn Oil Co. in Pennsylvania. With the latter company he started as a boy.

In addition to his regular duties, Mr. Hickman has taken out a number of patents for various equipment used in the manufacture of natural gasoline from gas.

COMMITTEE D-2 MEETS FRENCH LICK JUNE 22

Committee D-2 (petroleum committee) of the American Society for Testing Materials will hold its annual meeting at French Lick Springs Hotel, French Lick, Ind., June 22. The committee meeting is held in connection with the Thirtieth Annual Meeting of the American Society for Testing Materials.

Several matters relative to tests for petroleum products will come up for final action. The program as announced by the committee of which F. A. Hull is chairman states: "Present new methods of sampling petroleum and petroleum products and test for melting point of petrolatum. Recommends revision of tentative method of test for penetration of greases, for detection of sulphur in gasoline and for carbon residue of lubricants. Recommends the advancement to standard of nine tentative methods of test and the revision of the standard method of test for flash and fire points by means of open cup, and method of test for water."

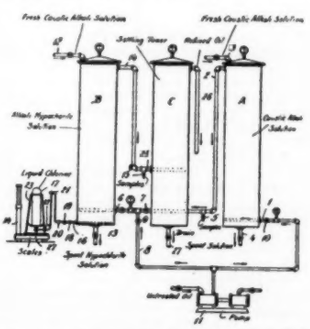
A paper on the "Evaluation of Transformer Oils" will be presented by James G. Ford. The paper describes methods for the determination of unsaturated, aromatic, naphthene and paraffin hydrocarbons occurring in transformer oils. Presents results of study showing that unsaturated and naphthene hydrocarbons play an important role in the oxidation of these oils, as regards quantity of sludge and acid formed. Laboratory samples have been prepared which are highly resistant to oxidation.

START SMACKOVER PLANT

The new refinery of the Simms Oil Co. located at Smackover, Ark., will start regular operations this week. Test runs have been made during the past few days. The refinery is a combination skimming and cracking plant with a rated capacity of 2,500 bbls. daily. The cracking units are of the Cross type. The refinery has been in the process of construction for several months.

Recent Patents

1,622,879. Refining Oils. Harrison O. Parker, Tulsa, Okla., assignor to The Mathieson Alkali Works, New York, N. Y., a Corporation of Virginia. Filed January 22, 1925. Serial No. 3,983. 4 Claims. (Cl. 196—42)



1. An improved method of refining hydrocarbon oils in a continuous manner which comprises passing the oil through a body of aqueous hypochlorite solution containing an excess of caustic alkali, introducing chlorine into the solution in the proxmity of the point at which the oil is introduced, whereby additional quantities of hypochlorite are formed and the oil is subjected to that portion of the solution containing the highest concentration of hypochlorite first.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	May 10		May 3		April 26	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06	.06¼	.06	.06¼
56-58 450 end point	.06	.06¼	.06	.06¼	.06	.06¼
58-60 450 end point	.06¼		.06	.06¼	.06	.06¼
58-60 437 end point (U. S. Motor)	.06½		.06¼	.06½	.06¼	.06½
60-62 400 end point	.06¾		.06⅝	.06¾	.06⅝	.06¾
64-66 375 end point	.07		.07		.07	
68-70 360 end point	.07½	.07¾	.07½	.07⅞	.07½	.07¾
64-66 437 end point (blend)	.06	.06¼	.06	.06¼	.06	.06¼
KANSAS—						
58-60 437 end point (U. S. Motor)	.06¾		.06½	.06¾	.06½	.06¾
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.06		.06		.06	
56-58 450 end point	.06		.06		.06	.06¼
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06⅛	.06½
60-62 400 end point	.06⅝	.06¾	.06½	.06¾	.06½	.06¾
64-66 390 end point	.06¾		.06¾		.06¾	
64 66 375 end point	.06¾	.07	.06¾	.07	.06¾	.07
68-70 360 end point	.07¼	.07½	.07¼		.07¼	.07½
64-66 437 end point (blend)	.06¼		.06¼		.06	.06¼
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.06½		.06½		.06¼	.06½
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.06½		.06½		.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.08¼	.09	.08¼	.09	.08¼	09
54-56 Naphtha	.08¾	.09	.08¾	.09	.08⅝	.09
58-60 Gasoline	.08½	.08¾	.08½	.08¾	.08½	.08¾
60 Gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09½
62 Gasoline	.10	.10¼	.10	.10¼	.10	.10¼
64 Gasoline	.10¼	.10½	.10¼	.10½	.10¼	.10½
CALIFORNIA—						
58 60 437 end point (U. S. Motor) domestic	.09	.10½	.04½	.05	.04½	.05
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.06		.06	.06¼	.06	.06¼
56-58 450 end point	.06	.06¼	.06		.06	.06¼
58-60 437 end point (U. S. Motor)	.06⅜	.06½	.06½		.06¼	.06½
60-62 400 end point		.06¾	.06½	.06¾	.06⅝	.06¾
64-66 375 end point	.07	.07¼	.07	.07⅛	.07	.07¼
68-70 360 end point	.07¼	.07¾	.07½	.07¾	.07½	.07¾
64-66 437 end point (blend)	.06¼	.06½	.06		.06	.06¾

NATURAL GASOLINE

	May 10		May 3		April 26	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05		.04⅝		.04¼	.04½
Grade A, 72-79.9, 375 e.p., rec. 90%	.05		.04⅝	.04¾	.04⅝	
Grade BB, 84 92, 375 e.p., rec. 85%	.04⅜		.04¼	.04⅓	.04⅛	.04¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅜	.04½	.04¼		.04¼	
Grade C, 80-90, 375 e.p., rec. 78%	.04	.04¼	.04		.03⅞	.04
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05		.04⅝	.04¾	.04¼	.04½
Grade A, 72-79.9, 375 e.p., rec 90%	.05	.05⅛	.04⅝	.04¾	.04½	.04⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04⅛	.04¼	.04⅛	.04¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅜	.04½	.04¼		.04¼	
Grade C, 80-90, 375 e.p., rec. 78%	.04¼	.04½	.04	.04¼	.04	
NORTH LOUISIANA—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05	.05½	.05	.05¼	.05	.05¼
Grade BB, 84-92, 375 e.p., rec. 85%	.05	.05¼	.04¾	.05	.04¾	.05
Grade C, 80-90, 375 e.p., rec. 78%	.04½	.04¾	.04¼	.04½	.04¼	.04½
CALIFORNIA—						
75-85, 375 390 end point	.10	.10½	.06½	.07	.06½	.07
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05		.04½		.04½	.04⅝
Grade A, 72-79.9, 375 e.p., rec. 90%	.05		.04⅝		.04¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼	.04⅜	.04		.04¼	
Grade B, 76-83.9 e.p., rec. 85%	.04¼	.04⅜	.04¼		.04½	
Grade C, 80-90, 375 e.p., rec. 78%	.04	.04⅛	.03⅞	.04	.04	

BURNING OIL

	May 10		May 3		April 26	
KANSAS—						
41-43 water white Kerosene	.04¾	.05	.04⅝	.05	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¾	.04½	.04¼	.04½	.04¼	.04¼
42-44 water white Kerosene	.04⅝	.04¾	.04½	.04¾	.04½	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½	.04¾	.04¼	.04½	.04¼	.04½
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04½	.03⅞	.04⅛	.03⅞	.04⅛
ARKANSAS—						
41-43 water white Kerosene	.04⅝	.04¾	.04½	.04¾	.04½	.04¾
PENNSYLVANIA—						
43 Kerosene prime white	.06¼	.06½	.06½	.06¾	.06½	.06¾
45 Kerosene water white	.06½	.06¾	.06¾	.07	.06¾	.07
46 Kerosene water white	.07	.07¼	.07¼	.07½	.07¼	.07½
47 Kerosene water white	.07¼	.07½	.07½	.07¾	.07½	.07¾
300 Mineral Seal	.07¾	.08	.08	.08¼	.08	.08¼
CALIFORNIA—						
38-40 water white (high burning test)	.05¾	.06½	.04¾	.06	.04¾	.06
Engine distillate, 43-45 445 end point	.07	.07½	.04¼	.04½	.04¼	.04½
Engine distillate, 42-44 480 end point	.06¾	.07	.04	.04¼	.04	.04¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04¼		.04¼	.04½
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾

FUEL OILS

	May 10		May 3		April 26	
KANSAS—						
24-26 Fuel Oil	1.00	1.05	1.02½	1.05	1.05	1.10
32-36 Gas Oil	.02¾	.03	.02⅝	.03	.02¾	.02⅞
38-40 Distillate	.03½	.03¾	.03¼	.03½	.03¼	.03½
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.85	.90	.90		.90	.95
18-22 Fuel Oil	.90	.95	.90	.95	.95	.97½
22-26 Fuel Oil	.92½	.95	.92½	95	.95	.97½
24-26 Fuel Oil	.95	.97½	.95	.97½	.97½	1.00
26-30 Fuel Oil	.97½	1.00	.97½	1.00	1.02½	1.05
28-30 Fuel Oil	1.00	1.05	1.00	1.05	1 05	
32-36 Gas Oil (dark)	.02¾		.02⅝	.02¾	.02½	.02⅝
32-36 Gas Oil (straw overhead)	.02¾	.02⅞	.02⅝	.02¾	.02½	.02⅝
36 38 Distillate	.03½	.03¼	.03		.03	.03⅛
38-40 Straw Distillate	.03¼	.03½	.03¼		.03¼	
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.85	.90	.85	.90	.90	.95
32-36 Gas Oil (straw)	.02⅝		.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.03⅛	.03¼	.02¾	.03	.02⅞	.03
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.10	1.15	1.10	1.15
32-36 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
ARKANSAS—						
36-38 Distillate	.03¼	.03½	.03	.03¼	.03	.03¼
32-36 Gas Oil (straw)	.02¾	.03	.02¾	.03	.02¾	.03
16-20 Refinery Fuel Oil	.95		.95		.95	1.05
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
Fuel Oil	1.50	1.60	1.50	1.60	1.50	1.60
PENNSYLVANIA—						
30 34 Fuel Oil	.05	.05½	.05⅞	.06	.05⅞	.06
36-40 Fuel Oil	.05	.05¼	.05⅜	.05½	.05⅜	.05½
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03¼	.03¾	.03¼	.03¾	.03¼	03¾
*15-20 Fuel Oil, Bunkers, (at tide water)	.85	1.00	.85	1.00	.85	1.00
15-20 Fuel Oil (cargo lots)	.71	.75	.71	.75	.71	.75
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	.95	.97½	.95	.97½	1.00	1.05
22-26 Fuel Oil (sellers' cars) Group 3	.92½	.97½	.95		.97½	1.00
18-22 (Group 3)	.90	.95	.90	.92½	.95	.97½
16-20 Smackover	1 12½	1.15	1.15	1.17½	1.15	1.17½
32 36 Gas Oil (zero)	.02⅝		.02⅝	.02¾	.02⅝	.02⅞
32-36 Gas Oil (industrial)	.02⅝	.02¾	.02½	.02⅝	.02½	.02¾
36-38 Distillate	.03		.03¼		.03	.03¼
38-40 Straw Distillate	.03¼		.03		.03¼	.03⅜

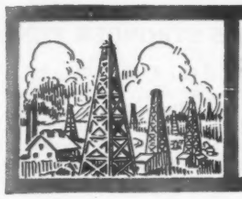
*Bunkers.

LUBRICATING OIL AND WAX

	May 10		May 3		Apr. 26	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06½	.06¾	.06½	.06¾	.06½	.06¾
100 vis., 3 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
150 vis , 3 color, 20-25 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
150 vis , 4 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
180 vis., 3 color, 23-28 cold test	.10	.10¼	.10	.10¼	.10	.10¼
180 vis., 4 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 5 color, 23 28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 3 color, 23 28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis , 4 color, 23-28 cold test	.10⅜	.10⅞	.10⅜	.10⅞	.10⅜	.10⅞
200 vis., 5 color, 23-28 cold test	.10½	.10¾	.10½	.10¾	.10½	.10¾
240 vis., 3 color, 25-30 cold test	.14	.14¼	.14	.14¼	.14	.14¼
240 vis., 4 color, 25-30 cold test	.13½	.13¾	.13½	.13¾	.13½	.13¾
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.15¼	.16¼	.15¾	.16¼	.15¾	.16¼
280 vis , 4 color, 25-30 cold test	.15¼	.15½	.15¼	.15½	.15¼	.15½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.07½	.10	.07½	.10	.07½	.10
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02¾		.02¾	.03
PENNSYLVANIA—						
34 Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08½	.08¾
36 Miners' Neutral	.07	.07¼	.07	.07¼	.07	.07¼
150, 3 color	.28¼	.28½	.28¼	.28½	.28¼	.28½
180, 3 color	.32¼	.32½	.31¾	.32	.31¾	.32
200, 3 color	.34¼	.34½	.33¼	.34	.33¼	.34
220, 3 color	.34¼	.36½	.35¼	.36	.35¼	.36
600, steam refined	.08¾	.09	.09	.09¼	.09	.09¼
635, steam refined	.10¾	.11	.10¾	.11	.10¾	.11
650, steam refined	.12¾	.13	.12¾	.13	.12¾	.13
600, Pennsylvania flash	.17½	.18	.17½	.18	.17½	.18
630, Pennsylvania flash	.28	.28½	.28½	.29	.28½	.29
*550, E filtered	.17¼	.18	.17¼	.18	.17¼	.18
*600, E filtered	.18¼	.18¾	.19	.19½	.19	.19½
600, E filtered	.17¼	.17¾	.18	.18½	.18	.18½
600, D filtered	.25	.25½	.25	.25½	.25	.25½
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.33	.33½	.33	.33½	.33	.33½
†122-124 White Crude Scale Wax	.02¾	.02⅞	.03⅛	.03¼	.03⅛	.03¼
†124-126 White Crude Scale Wax	.02⅞	.03	.03½	.03¾	.03½	.03⅝

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08½	.07½	.08½	.07½	.08½
No. 3 color, 200 vis., pale oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 3 color, 300 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3½ color, 500 vis., pale oil	.13½	.14	.13½	.14	.13½	.14
No. 4 color, 750 vis., pale oil	.16	.16½	.16	.16½	.16	.16½
No. 5 to 6 color, 200 vis., red oil	.08½	.09½	.08½	.09½	.08½	.09½
No. 5 to 6 color, 300 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 to 6 color, 500 vis., red oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 5 to 6 color, 750 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15
No 2 color, 200 vis., pale filtered	.13	.14	.13	.14	.13	.14
No. 2 color, 300 vis., pale filtered	.14	.15	.14	.15	.14	.15
No. 2½ color, 500 vis., pale filtered	.16	.17	.16	.17	.16	.17
No. 2½ color, 750 vis., pale filtered	.20		.20		.20	
CALIFORNIA—						
130 vis., 2½-3 color	.10½	.11	.10½	.11	.10½	.11



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

200 vis., 2½-3	color	.11	.11½	.11	.11½	.11	.11½
300 vis., 3 -3½	color	.11½	.12	.11½	.12	.11½	.12
350 vis., 3½-4	color	.12	.13	.12	.13	.12	.13
400 vis., 3½-4	color	.13	.15½	.13	.15½	.13	.15½
Red Neutral:							
200 vis., 4½-5	color	.09½	.10½	.09½	.10½	.09½	.10½
300 vis., 5 -6	color	.10½	.11	.10½	.11½	.10½	.11½
400 vis., 5 -6	color	.12	.13½	.12	.13½	.12	.13½
500 vis., 4½-5	color	.13½	.14½	.13½	.14½	.13½	.14½
500 vis., 5 -6½	color	.12	.13½	.12½	.13½	.12½	.13½
600 vis., 6½ plus	color	.12½	.14½	.13½	.14½	.13½	.14½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	May 10	May 3	Apr. 26
Gasoline, U. S. Motor, 58-60 437	.08¾	.08¾	.08¾
Kerosene, water white, 41-43	.07	.07½	.07½
*Fuel Oil, bunker "C" 14-16, per bbl.	1.75	1.75	1.75
*Fuel Oil, Diesel, 28-30, per bbl.	2.30	2.30	2.40
Gas Oil, 28 plus	.05¾	.05¾	.06
25 pale Paraffin Oil	.11¾	.12	.12
28 pale Paraffin Oil	.07¼	.07½	.07½
285 red Paraffin Oil	.12¾	.13	.13
250 red Paraffin Oil	.11¾	.12	.12
225 red Paraffin Oil	.10¾	.11	.11
200 red Paraffin Oil	.09¾	.10	.10
Refined Wax:			
120-122 a.m.p., per lb.	.03⅞	.03⅞	.03⅞
125-127 a.m.p., per lb.	.04	.04⅛	.04¼
130-132 a.m.p., per lb.	.04⅝	.04¾	.04¾
135-137 a.m.p., per lb.	.04⅞	.05	.05
Petrolatum, in bbls.; carload lots, per lb.:			
Dark green	.01¾	.01⅞	.01⅞
Amber	.03¼	.03⅜	.03⅜
Extra amber	.03⅝	.03¾	.03¾
Cream	.05½	.05½	.05½
Lily white	.07	.07	.07
Snow white	.08	.08⅛	.08⅛

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	May 10	May 3	Apr. 26
Gasoline, U. S. Motor, 58-60 437, in cases	.2390	.2390	.2390
Kerosene, standard white, in cases	.1615	.1615	.1615
Kerosene, water white, in cases	.1715	.1715	.1715
600 steam refined cylinder stock, in bbls.	.18	.19	.19
635 steam refined	.20	.21	.21
650 steam refined	.22	.23	.23
600 Pennsylvania flash	.26	.27	.27
630 Pennsylvania flash	.34	.34	.34
600 Warren E	.36	.26	.26
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.42	.44	.44
Dark 135 Bright Stock	.40	.42	.42

LOS ANGELES EXPORT PRICES

	May 10		May 3		Apr. 26	
Kerosene water white	.04¼	.04½	.04	.04¼	.04	.04¼
U. S. Motor Gasoline, 53-55 437 e.p.	.06½	.07	.06	.06½	.06	.06½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927)	$1.00
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County	$ .95
*Hutchinson County	.95
Gray-Wheeler Counties	See gravity table

*Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co. and Kay County Gas Co., March 14.

WEST TEXAS

*Iatan (Same as North Texas)	
Crane-Upton-Crockett	See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.16 for Howard County crude, effective March 12.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17)	$1.00
Bellevue (Feb. 24, 1927)	1.25
Urania (March 16, 1927)	1.00
East El Dorado (March 16)	1.00
Other fields	See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

†Grade A (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	1.05
†Saratoga, Batson, Dayton (March 14, 1927)	1.20
**Markham March 14	1.00

*Gulf Pipe Line Co., †Sun Pipe Line Co. †Humble Oil & Refining Co. and other major buyers. **The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5)	$1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (Milam County)	1.25
*Thrall	
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19¼ cents per cwt. freight.

†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	1.25
Mule Creek (February 23)	1.30
Grass Creek, light (March 12)	1.33
Grass Creek, heavy	.68
Elk Basin (March 12)	1.32
Lance Creek (March 12)	1.32
Poison Spider	1.00
Notches	.65
Rex Lake (February 23)	1.10
Osage	1.33
Lost Soldier (contract) (May 17)	1.60
Greybull-Torchlight	1.33
Hamilton Dome	1.36
Cat Creek (Mont.)	1.33
Sunburst (Mont.) (October 5)	1.35
Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.30

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective March 7)

Penna Grade Oil in New York Transit Line (New York)	$2.90
Bradford District Oil in National Transit Lines (Pennsylvania)	2.90
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.80
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.80
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania)	2.75

(Continued on Page 160)

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	Okla., Kans., N. C. Tex., La.-Ark. 1	Smackover, Ark. 2	Stephens, Ark. 3	Wheeler and Gray Counties, (Texas Panhandle) 4	Crane, Upton Crockett Counties (West Texas) 5	Salt Creek, Wyo. 6	Grade B & Light Crude (S. Coast) 7	Somerset (South Central Texas) 8
Below 24	....	1.00	....	....	....	....	....	....
24 to 24.9	....	1.25	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.70	....	....	....
26 to 26.9	....	....	....	....	.72	....	1.19	....
27 to 27.9	....	....	....	....	.74	....	1.21	....
Below 28	****	....	....	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.76	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.78	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.80	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.82	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.84	1.20	1.31	1.06
33 to 33.9	1.22	....	....	.90	.86	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.88	1.24	1.34	1.09
35 to 35.9	1.26	....	....	.94	.90	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.92	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule May 5, making price below 33 gravity $1.05 per barrel, with 2 cents increase per degree higher in gravity, taking 33-33.9 gravity at $1.07 as basis, with a top price of $1.45 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 13; Carter Oil Co., The Texas Company, March 14.

North Central Texas—(Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs [Southwest Texas], Iatan and Panola [Magnolia only], Currie, Nocona, Moran and Corsicana light): Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only): Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—Standard Oil Co. of Louisiana, The Texas Company, Gulf, Atlantic, March 17, Magnolia Petroleum Co. (March 16) posted price of $1.00 for below 24 degrees and $1.15 for 24 and above. Louisiana Oil Corp. posted following prices effective March 16: Below 24, $1.00; 24 to 27.9, $1.15; 28 to 28.9, $1.17; 29 to 29.9, $1.19; 30 and above $1.21.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14.

Column 5—Humble Oil & Refining Co., Kay County Gas Co. and Gulf Pipe Line Co., March 14.

Column 6—Midwest Refining Co., March 12, 1927. All crude over 37 gravity, $1.30 per bbl.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co. which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

****Prices for crude below 28 gravity: Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12, 1927; Arkansas, North Louisiana, March 14. Other companies 2 cents less for each degree with exception of Humble Oil & Refining Co. which pays $1.13 for crude below 28 degrees gravity.

CALIFORNIA CRUDE PRICES
***Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)**

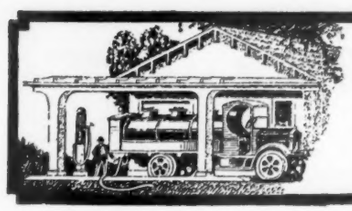
Gravity—	Fullerton, Seal Beach, Long Beach, Huntington Beach, Rosecrans-Dom'guez, Torrance-Inglewood 1	Whittier, La Habra, Montebello 2	Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Beiridge, Buena Vista Hills, Coyote 3	4	Santa Fe Springs 5	Coalinga, Salt Lake 6	Wheeler Ridge 7	Santa Maria, Ventura, Orcutt 8
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.82	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Beiridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns May 10.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago dist.	14.0	16.0	...	12.0
Decatur, Ill.	14.2	16.2	...	12.1
E. St. Louis	13.1	15.35	...	11.2
Joliet	14.4	16.4	...	12.3
Peoria	14.2	16.2	...	12.1
Quincy	14.2	16.2	...	9.9
Davenport, Ia.	16.5	18.5	2.0	12.3
Des Moines	16.0	18.0	2.0	12.8
Keokuk	16.5	18.5	2.0	12.3
Sioux City	16 1	18 1	2 0	11.9
Duluth, Minn.	17.5	18.5	2.0	12.9
Minneapolis	17.2	19.2	2.0	12.9
LaCross, Wis.	17.2	19.2	2.0	13.0
Milwaukee	16.1	18.1	2.0	11.9
Madison	16.3	18.3	2.0	12.1
Detroit, Mich.	16.8	18.8	2.0	13.7
Grand Rapids.	16 7	18 7	2 0	13 6
Saginaw	16.9	18.9	2.0	13.6
Evansville, Ind.	17.0	19.0	3.0	13.0
Ft. Wayne	17.4	19.4	3.0	13.4
Indianapolis	17.2	19.2	3.0	13.2
South Bend	17.4	19.4	3.0	13.4
Fargo, N. D.	18.9	20.9	2.0	14.9
Huron, S. D.	15.5	17.5	3.0	13.9
Sioux Falls	17.3	19.3	3.0	13.4
*K. C., Mo.	16 9	18.9	3.0	10.6
*Springfield	16.8	18.8	3.0	11.5
*St. Louis	15.6	17.9	2.5	11.2
*St. Joseph	16.5	18.5	3.0	11.2
Wichita, Kans.	14.8	16.8	2.0	10.8
Bartlesville, Ok.	15.0	17.0	3.0	10.8

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	16 0	11 75
V. M. & P. naphtha	18.0	13.75
Cleaner's naphtha	18 0	13 75
Stanlnol	19.0	.....

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Tankwagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district, where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

In addition the following quantity discount schedule is in effect on monthly tankwagon deliveries of gasoline 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. In the Chicago district purchases of 750 to 2,000 gallons a month discounted one-half cent; and, 2,000 to 6,000 gallons, three-quarters cent. If the quantity bought during the year is 12 times the monthly agreed purchases the discount is paid or credited on the entire quantity less monthly payments.

Monthly service station deliveries of 200 gallons or more, and annual deliveries of 2,400 gallons or more are discounted 2 cents.

*State tax 2 cents; remainder city tax.

SOUTHWESTERN DISTRICT
*Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Tex.	13 0	16 0	3.0	11 0
Fort Worth	14 0	17.0	3 0	11.0
Houston	15 0	19.0	3.0	15.0
San Antonio	13 0	16.0	3.0	11 0
El Paso	17 0	19 0	3 0	16 0
Texarkana	15.0	18.0	3.0	12 0
Muskogee, Ok.	16.0	19.0	3.0	10 0
Okla. City	16.0	19.0	3.0	10 0
Tulsa	16.0	19.0	3.0	10 0
Little Rock	17.0	20.0	4.0	12 0
Ft. Smith, Ark.	17.0	20.0	4.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 9,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purcheses.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

CENTRAL SOUTH DISTRICT
Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*New Orleans	17.5	18.5	3.0	14 0
Baton Rouge	14.0	17.0	2.0	12 5
Alexandria	15 0	18.0	2.0	14 0
LaFayette	15.0	18.0	2 0	13 5
Lake Charles	15 5	18.5	2 0	14 0
Chattanooga	19 5	22.5	3 0	15.0
Shreveport, La.	14 0	17 0	3.0	13.0
Knoxville	19 5	22.5	3.0	15 0
Memphis, Tenn.	17.0	20.0	3.0	14.0
Nashville	16 5	19 5	3.0	15.0
Bristol	19 0	22 0	3.0	14.0
Lit. Rock, Ark.	17.0	20.0	4.0	12.0

*Tax of 3c includes city tax of 1c.
*Louisiana kerosene prices include 1-cent state tax and 1 cent parish tax.

OHIO
Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	18.0	20 0	2.0	15.0

SOUTHERN DISTRICT
Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlanta, Ga.	18.0	21 0	4 0	16 0
Augusta	20 0	23 0	4 0	15 0
Macon	20 0	23.0	4 0	16 0
Savannah	18.0	20.0	4.0	15.0
Birm'ghm, Ala.	20 0	23 0	4.0	15.5
Mobile	19.0	22 0	4 0	15 0
Montgomery	21 0	24 0	5 0	16 5
Clarksd'le, Miss.	19 0	22 0	4 0	13 5
Jackson	19.0	22.0	4.0	14 5
Natchez	18 5	21 5	4 0	14 0
Gulfport	20.5	23 5	6 0	14 0
Vicksburg	18 5	21 5	4 0	14.0
Jack'ville, Fla.	15 0	21 0	4.0	14 0
Miami	20.0	23.0	4 0	15 5
Pensacola	19 0	22 0	5 0	15.0
Tampa	16.0	19.0	4.0	14.0
Covington	20.0	23 0	5 0	15 5
Louisville	19 0	22 0	5 0	15 0
Lexington, Ky.	18.0	21.0	5.0	15.5

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ¼c on kerosene only. Pensacola tax includes 1c. city levy. Gulfport tax includes privilege tax of 2c in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Pittsburgh, Pa.	16 0	*21 0	...	14 0
Philadelphia	15 0	20.0	...	14 0
Scranton	16.0	*21 0	...	14 0
Allentown	16 0	*21.0	...	14.0
Altoona	16.0	*21.0	...	14.0
Erie	14.0	19 0	...	14.0
Dover, Del.	19.0	22.0	3.0	14.0
Wilmington	19.0	22.0	3.0	14.0
Spring'd, Mas.	19 0	21 0	...	16 0
Worchester	19.0	21.0	...	16 0
Boston	19 0	21 0	...	15 0
Providence, R.I.	20 0	22 0	...	16 0
Hartford, Conn.	21 0	23 0	2.0	16.0
New Haven	21.0	23.0	2.0	16.0

*Includes tax of 2 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

ATLANTIC COAST DISTRICT
Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlantic City	16 0	....	...	14 0
Newark, N. J.	16.0	18.0	...	14 0
Annapolis, Md.	20 0	....	4 0	14 0
Baltimore	20 0	23 0	4.0	10 0
Cumberland	20 0	23 0	4.0	14 0
Washington	18 0	21.0	2.0	12.0
Danville, Va.	20 5	....	4 5	14 0
Norfolk	20.5	23 5	4 5	14.0
Petersburg	20 5	23 5	4 5	14 0
Roanoke	20 0	23.5	4.5	14 0
Richmond	20.5	23.5	4.5	14.0
Charleston, W. Va.	19.5	22.5	3 5	14 0
Keyser	19.5	....	3 5	14 0
Parkersburg	19 5	22 5	3 5	14.0
Wheeling	19 5	22 5	3 5	14 0
Charlotte, N. C.	20 0	23 0	4 0	14.0
Hickory	20.0	23 0	4 0	14.0
Mt. Airy	20.0	23 0	4 0	14 0
Salisbury	20 0	23 0	4 0	14.0
Charl'stn, S. C.	20.0	23 0	5.0	14.0
Columbia	20 0	20 0	5.0	15.0

PACIFIC COAST DISTRICT
Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco	15 0	19 0	2 0	15 5
Los Angeles	14 5	18 5	2 0	15 5
Fresno	15.0	19 0	2 0	17.5
Reno, Nev.	21 0	25.0	4 0	19 0
Portland, Ore.	16 5	20 5	2 0	16 5
Seattle, Wash.	15 5	19 5	2 0	16 5
Tacoma	15 5	19.5	2.0	16 5
Spokane	19 5	23 5	2.0	20 5
Phoenix, Ariz.	21.0	25.0	3.0	20.5

NEW YORK AND PART OF NEW ENGLAND DISTRICT
Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y.	19 0	21 0	...	15 0
*New York	19 0	23.0	...	15.0
Buffalo	18.0	21.0	...	14.0
Rochester	17 0	20 0	...	14.0
Syracuse	19 0	21 0	...	15 0
Boston, Mass.	19 0	21 0	...	15.0
Augusta, Me.	22 0	26.0	3.0	15.0
Manchester, N. H.	21.0	23 0	2.0	15 0
Burlington, Vt.	21.0	23.0	2.0	15.0

*Price in steel barrels.

NEBRASKA
Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	13 25	16 25	2 0	12 25
McCook	17 75	19 75	2 0	13 75
Norfolk	16 0	18.0	2 0	12.75
N. Platte	17 75	19 75	2 0	13 50
Scottsbluff	17 25	19.25	2 0	13.00

ROCKY MOUNTAIN DISTRICT
Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Denver, Colo.	17 0	17.0	2.0	15 5
Pueblo	17 0	18.0	2 0	15 5
Grand Junction	20 5	22 5	2 0	19 0
Casper, Wyo.	18.0	20 0	3.0	14 0
Cheyenne	18 0	20 0	3.0	15 5
Butte, Mont.	22 0	22 0	3 0	19 0
Helena	22 5	24 5	3 0	19.0
Salt Lake, Utah	21 0	23 0	3 5	17 0
Boise, Idaho	23 5	25.5	4 0	19 0
Twin Falls	23 5	25.5	4.0	19.0
Albuquerque, N. M.	21 0	24.0	5 0	18.0

TANK WAGON CHANGES

April 23—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 3½ cents at Huron, S. Dak.

April 27—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 1 cent at Duluth, Minn.

April 27—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 2 cents at Tampa, Fla.

April 29—Magnolia Petroleum Co. reduced the kerosene tank wagon price 4 cents in Dallas, Tex.

May 3—Magnolia Petroleum Co. reduced the kerosene tank wagon price 2 cents in Fort Worth, Tex.

May 3—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 2 cents at Atlanta, Ga.

May 4—Standard Oil Co. of California increased the gasoline tank wagon and station prices from 2 to 6 cents at all points throughout its territory.

May 7—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 2 cents at Sioux Falls, S. Dak.

May 10—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 2 cents throughout its territory except where prices were already below normal. At Kansas City, the price was reduced to 16.9 cents including tax and Duluth to 17.5 cents. Kerosene, naphtha and furnace oil tank wagon prices were reduced 1 cent throughout its territory. Standard Oil Co. of Nebraska reduced the gasoline tank wagon and station prices 2 cents in Nebraska, and reduced the kerosene tank wagon price 1 cent.

CRUDE CHANGES

May 5—Magnolia Petroleum Co. increased the price of crude purchased on the gravity basis in Oklahoma, Kansas and Texas 10 cents per barrel, thus reinstating the prices it set on April 7. The new prices on oil below 33 gravity is $1.05 per barrel, for 33 to 33.9 gravity oil $1.07 and a 2-cent differential is observed for each degree in gravity ending with 52 and higher gravity oil $1.45 per barrel. Luling crude was raised 5 cents a barrel making the new price $1 per barrel. On April 20 the price was reduced to 95 cents and this increase reinstates the price set April 7.

NORTH TEXAS MARKET HAS STRONGER TONE

WICHITA FALLS, Tex., May 9.—A stronger tone prevailed in the gasoline market of North Texas during the week closed while kerosene and naturals strengthened and increased fractionally in prices. Persistent efforts by refiners to hold U. S. Motor grade gasoline to 6¼ to 6½ cents met with success and the market for that product was a shade improved over that of the previous week. The spot trade locally and throughout Texas for that matter was steadier and consumption was on an upward trend.

Natural gasolines were stronger due primarily to the activity of export buyers in the market for 300 cars of double A. The purchase of that amount of natural gasoline was made last Friday at a price reported to be 5 cents. The bulk of the buy will come from North Texas plants. The slight improvement in U. S. Motor gasoline was reflected in the naturals with a shade stronger demand for the naturals.

Export activity again featured when it aided materially in the strengthening of kerosene. An export buyer has an option on 350 cars of kerosene to be bought at 4¼ cents. The option on the buy will expire at the close of business May 9.

Regardless of the export activity in kerosene the product was stronger in the North Texas area throughout the week. Not much of the burning oil is available in the territory. Inquiries were numerous and shipments throughout the week were good.

Fuel oil dragged and its movement was slow. Distillate showed signs of gaining a little strength and gas oils were sluggish.

MOST AMERICAN INDUSTRY

The Manufacturer and Industrial News magazine points out that the petroleum industry is characteristically American, and quotes a prominent oil man as follows: "If one were casting about to find a single industry whose story would be most characteristically American, most calculated to assure that our natural resources will meet our needs, most adaptable to shifting requirements, most fair and reasonable in its dealing with the public, most liberal in its contribution to the public revenues, most efficient in methods and readiest to adopt improvements, I think the industry of petroleum would quickly command attention. I even suspect that a survey covering all the factors would have to award it first place."

CRUDE OIL PRICES

(Continued from Page 159)

Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.60
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) March 16	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) March 16	1.50
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	.95
Kelster (Pennsylvania)	1.10

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.77
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1.38
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.35
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (November 18)	2.35
§Oil Springs (Canada)	2.11
§Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO
(Effective May 12)

*Tuxpam light (f.o.b. Mex. ports)	$1.38
†Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.86

*Plus $2.328c tax. †$7.631c tax.

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IT'S not only what this sign says that counts so much—*but what it means!*

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SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

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Oil Securities Active and Irregular

Belief Growing That Industry Will Have to Look Beyond Natural Decline of Crude Production for Relief

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, May 9.—Oil securities were active and irregular during the past week. Selling made its appearance in issues which had begun to recover from recent lows. Daily reports of sensational discovery wells in entirely new areas served to dampen enthusiasm in oil shares. With the outlook being for increased output and in view of the large amount now shut in, it is believed the oil industry will have to look elsewhere for relief than in any natural decline in the country's output of crude.

Standard Oil Dividends

The Standard Oil companies have distributed $3,139,154,141 in cash and stock at par from the time of the dissolution, in 1911, to the present. Of this total, $1,751,074,896 was in cash and $1,388,079,245, according to a compilation by the Wall Street Journal.

In addition, rights to subscribe to $400,789,144 par of common and preferred stock were granted to stockholders, and these had considerable value. This does not include the preference accorded in 1926 to stockholders of the Standard Oil Co. of New Jersey to subscribe to that company's 5 per cent 20-year debentures at $100 50.

Mexican Seaboard Oil

The report of the Mexican Seaboard Oil Co. and International Petroleum Co. of Maine, for the year ended December 31, 1926, shows combined loss of $2,134,642 after interest, depreciation, etc., but before providing for depletion reserve, comparing with profit of $190,691 before depletion in 1925.

The combined income account for 1926 compares with 1925 as follows:

	1926	1925
Gross earnings	$5,489,630	$8,262,549
Expenses	3,471,917	4,389,868
Balance	$2,017,713	$3,872,681
Other income	125,014	165,594
Total income	$2,142,727	$4,038,275
Interest	279,633	245,000
Deprec., drilling ex. etc.	3,997,736	3,683,674
*Loss	$2,134,642	†$109,601

*Before providing for depletion reserve. †Profit.

The combined balance sheet of the Mexican Seaboard Oil Co. and International Petroleum Co., as of December 31, 1926, compares as follows:

Assets

	1926	1925
*Property, plant, etc.	$ 9,127,775	$10,319,918
Cash	387,166	1,595,357
Accounts receivable	346,237	533,076
Crude oil	30,950	65,414
Invest. and advances	3,484,717	5,979,226
Deferred charges	196,800	263,203
Total	$13,573,645	$18,756,194

Liabilities

†Capital stock	$ 6,510,038	$ 6,510,038
Int. Pet. Co. stock	20,000	20,000
Debenture bonds	3,500,000	3,500,000
Accounts payable	581,093	335,273
Notes payable	605,000	405,000
General reserve		3,500,000
Deferred credits	40,477	8,477
Depletion reserve	2,235,370	$4,395,719
Total	$13,573,645	$18,756,194

*After depreciation. †Represented by 945,939 no par shares. ‡After deducting $3,500,000 transferred to general reserve.

Atlantic Refining

The Atlantic Refining Co. officials at the recent annual meeting issued the following statement to stockholders:

"You may recall that early in the year your management was quoted in the financial press as saying it was hopeful of a resumption of dividends on your common stock about the middle of the year.

"Its intent then was, and still is, to retire the $2,800,000 still outstanding of the 4½ per cent note issue of July 1, 1924, and to use the remaining cash in substantial part at least, for common dividends at quarterly intervals.

"Naturally, the great changes that have taken place in oil business conditions admonished deliberation and caution. In consequence, the next dividend when declared will be modest—probably 1 per cent for the quarter, and will in no way reflect the hopes and desires of your directors as to further future distribution. Their procedure will be to consider every dividend as an individual decision based upon the best information and judgment available at the time action is taken. As to whether in the long run and on the average the dividends can be large or small will depend upon the business success of your company."

Elisha Towers of New York, a stockholder, questioned the management on its depreciation policy, expressing the belief that the charge-off on this account during the past five years, which, he said, totaled $100 a share on the stock, was excessive. Albert Hill, treasurer of the company, explained depreciation charges conformed to the recommendation of the company's engineers who made a survey and physical appraisal of the properties. Depreciation rates now range from 2 per cent on some properties to 10 per cent on others, or an average of about 6½ per cent. In addition, there is a charge of 1½ per cent for obsolescence. He emphasized that the depreciation charge neither takes anything away from stockholders nor gives anything to them but it does put back of the stock a strong bulwark of reserve. Mr. Hill states that the company had put $97,000,000 into the property since 1912.

President Van Dyke, answering inquiries, said that the company buys 80 per cent of the crude oil it refines, and has a crude production of 13,000 bbls. a day.

J. W. Van Dyke was made chairman of the board and W. M. Irish succeeded him as president. Albert Hill and Edwin R. Cox were made vice presidents, and other officers were re-elected.

The question of resumption of dividends on the common stock will be considered at the meeting of the board of directors May 10.

Shell Union Oil

The Shell Union Oil Corp. has issued its pamphlet report for the year ended December 31, 1926. Net income of $31,518,965 after depreciation, depletion, drilling expenses and special reserve of $5,000,000, the same as previously published. This is equivalent after deducting preferred dividends to $3.04 a share earned on the outstanding 10,000,000 no par value shares of common stock, and compares with $20,415,960, or $1.93 a share, after deducting $2,800,000 special reserve, in 1925.

The consolidated income account for 1926 compares as follows:

	1926	1925
*Gross income	$65,044,900	$50,293,550
Deprec. and depl. reserve	28,230,574	26,735,942
Special reserve	5,000,000	2,800,000
Balance	$31,814,326	$20,757,608
Minority interest	295,361	341,648
Net income	$31,518,965	$20,415,960
Pref. dividends	1,035,172	1,031,536
Common dividends	20,000,000	14,000,000
Surplus	$10,483,793	$ 5,348,424

*Includes half interest in income of Comar Oil Co.

The consolidated balance sheet of the Shell Union Oil Corp. and subs diaries, as of December 31, 1926, compares as follows:

Assets

	1926	1925
Plant Account	$306,354,974	$251,260,114
Investment	3,350,972	3,263,635
Advances	1,451,109	2,207,358
Inventories	22,759,467	22,585,774
Materials and supplies	6,100,793	4,883,595
Accts. and notes receivable	9,595,987	8,378,121
Demand loans	20,348,616	26,060,705
Cash	2,566,409	2,724,163
Deferred charges	1,361,901	1,064,441
Total	$373,890,228	$332,427,906

Liabilities

Preferred stock	$ 16,965,400	$ 17,365,400
*Common stock	201,412,821	201,412,821
Minor. int. in subs.	1,472,053	1,768,575
Purch. oblig. prep.	1,646,996	1,501,333
Accts., fed. taxes, etc., payable	17,820,277	10,181,180
Accrued. pfd. divs.	135,093	137,629
Depr. and depl res.	84,159,016	65,256,189
Special reserve	15,000,000	10,000,000
Surplus	35,288,572	24,804,779
Total	$373,890,228	$332,427,906

*Represented by 10,000,000 no par value shares.

First Quarter Earnings

The Amerada Corp. reports for the quarter ended March 31, 1927, net income of $1,165,674 after depreciation, depletion and Federal taxes, equivalent to $1.27 a share earned on 915,615 shares of no par stock. This compares with $811,627, or $1.14 a share, on 713,300 shares of stock outstanding in the first quarter of 1926.

The Superior Oil Corp. for the quarter ended March 31, 1927, reports net profit of $324,382 after interest, depreciation, depletion, etc., equal to 29 cents a share earned on 1,103,238 shares of no par stock. This compares with net profit of $386,672, or 35 cents a share, in the preceding quarter, and net loss of $182,798 in the first quarter of 1926.

The report of the Tidal Osage Oil Co. for the quarter ended March 31, 1927, shows net income of $2,109,365 after taxes, interest, depreciation, depletion, etc., equivalent after preferred dividends to $3.33 a share (par $10) earned on 631,319 shares of common stock. This compares with $111,724 or 16 cents a share, in the first quarter of 1926. Preferred stock is now all retired.

Dividends

The Standard Oil Co. of California

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. May 9	Clos. Quot. May 2	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	29	27⅞	37⅝	30⅝	32⅝	21¾	..	..
Atlantic Ref., com.	100	110	108½	117⅝	107	128⅝	97	117½	95½
Barnsdall "A"	25	23⅝	24⅜	35½	26⅜	32½	23½	33½	18¾
California Pet., com.	25	25⅝	24⅜	32⅝	24⅜	28⅛	20⅝	34⅜	23⅜
Houston Oil	100	117⅞	116½	124⅝	60½	75	50¼	85	59
Independent Oil & Gas	..	20⅜	19¼	32⅜	19¼	34	20¼	41¾	13½
Louisiana Oil	10	12⅜	12½	18½	12⅜	19⅝	12	23⅜	13¾
Maracaibo	..	14	13⅜	22⅜	15	27⅜	18⅜	35½	20⅜
Marland	..	37⅜	37	58⅛	37½	63⅝	49¼	60⅛	32⅝
Mid-Continent Pet.	..	30⅝	29½	39⅝	30⅞	41	25⅞	38	25⅝
National Supply	50	81½	83½	95⅝	82½	84⅞	55⅛	71	54⅝
Oil Well Supply	25	33¼	33⅞	40⅝	31¼	36	30	38	33⅜
Pan. Amer., B	50	58⅝	57¼	65⅞	57½	72⅜	56⅛	83⅜	59½
Pan. Amer., Western B	..	23¼	21¼	37⅛	26⅞	46	34	94⅜	37¼
Phillips Pet.	..	43¼	41⅜	60¼	41½	54⅜	42⅛	47⅛	36¼
Producers & Refiners	50	28	29⅜	32	16⅜	26	11	32⅜	12¼
Pure Oil, com.	..	27½	26⅜	32⅜	26⅜	31	25⅜	33¾	25½
Royal Dutch, N. Y., sh.	13.40	49⅜	48⅛	54⅛	50	57⅜	49⅜	57⅜	48¼
Shell Transport	10	*41½	*42⅛	49	44¼	48⅜	42	49	39⅜
Shell Union, com.	..	27⅝	27	31⅜	26⅜	30⅞	24	28⅜	21⅝
Simms Pet.	10	17½	17½	22⅜	18⅜	28⅝	16½	28½	17⅜
Sinclair Consolidated	..	17⅜	16⅜	22⅜	17⅜	24⅞	16⅜	24⅜	17
Skelly Oil	25	26⅜	25¼	37⅜	26⅜	37¼	27	32½	21¾
Standard of California	25	55⅛	53	60⅜	52⅝	63½	54	67½	52⅛
Standard of New Jersey, com.	25	36½	35¼	41⅜	36	46⅝	37½	47⅜	38⅝
Standard of New York	25	30¼	30	34⅛	21	47¼	30⅝	48⅝	40
Sun Oil Co.	..	31	31½	34⅞	30	41⅝	30⅜	43⅞	38½
The Texas Company	25	47⅛	45⅝	58	43⅜	58	48	55	43⅜
Texas Pacific Coal & Oil	10	12½	12¼	16⅜	13	19½	12⅛	23⅜	11
Tide Water Oil	25	24⅞	*24	29⅛	27	39¼	27	..	..
Transcontinental	..	4	4	5	4⅛	5½	3	5⅝	3½
Union Oil of California	25	44	42¼	56½	39⅝	58⅜	37½	43⅝	33½
Union Tank, com.	100	106	106	112½	95	120⅜	84½	‡134	118
White Eagle O. & R.	..	23¼	22⅜	27½	22	29⅜	25½	21⅜	25⅝
Standard Oils									
Anglo-Amer. Oil	£1	19	*19⅜	21⅝	18⅜	19⅜	16½	26⅜	17⅛
Borne Scrymser	25	*53	50¼	69	53⅜	75	65	‡240	205
Buckeye Pipe Line	50	53⅛	*50	45	59½	47⅜	47⅜	72	63⅛
Chesebrough Mfg. Co.	25	92	*88½	95	76½	81⅛	63	74	48¾
Continental	10	18¼	17⅜	22⅜	18	25⅞	19¼	31⅛	21⅞
Cumberland Pipe Line	100	82½	80	137	106	137	102	156	128
Eureka Pipe Line	100	*52½	*52	51¼	47	53⅜	43	96	61¼
Galena Signal, com.	100	*8½	10	13½	10¼	32½	9⅜	68½	23½
Humble O. & R. Co.	25	56	57	62⅜	54	59⅝	52	99	42½
Illinois Pipe Line	100	148	141¾	141	123¾	144	131	154½	124
Imperial Oil	..	44½	44	46	37⅜	39⅜	32½	39¼	27¼
Ind. Pipe Line	50	66½	*65½	69½	61	68	52¼	84	87½
International Pet. Co.	10	29⅝	30⅛	34⅛	30¼	35¼	28⅝	25⅜	22¼
National Transit Co.	12.50	15⅜	15½	14	13⅜	20⅜	27¼	25½	16½
New York Transit	100	32½	32½	36	31¼	51½	27¼	70	50
Northern Pipe Line	100	*78	*75⅝	79¼	70	80½	64	88	67⅛
Ohio Oil Co.	25	56	55	64⅛	57½	67⅝	55⅜	75¼	60
Penn-Mex. Fuel	25	*15	*15	19	16½	24¼	15	44	19
Prairie Oil & Gas	25	47⅛	46⅛	55½	48¼	60¼	48	65½	45⅝
Prairie Pipe Line	100	164½	163½	165½	132	137½	1.21½	123⅜	105
Solar Refining Co.	100	*182	183	181¼	185	212	184½	159	200
So. Penn Oil	25	*35⅛	34½	41½	35½	50	35	‡197	139
S. W. Pa. Line	100	*68	*68	62½	55½	56	47¼	84	50
Southern Pipe Line	50	*16½	*17½	27¼	15½	37	24	‡103	63
Standard of Indiana	25	67	65⅜	74¼	66⅛	10⅛	61⅝	70⅜	69¼
Standard of Kansas	25	16⅝	*17	20⅜	15⅝	36½	16⅛	46	30¼
Standard of Kentucky	25	*113½	113	122¼	114½	134⅜	108	137	114⅜
Standard of Nebraska	25	46	46⅛	49⅛	46⅛	51⅛	42	‡270	231
Standard of Ohio, com.	100	80	78½	254	335	362	192½	369	338
Swan & Finch, com.	25	*15⅛	*16½	16	15	21	15	27	13
Vacuum Oil	25	112	112½	116½	95⅛	109⅝	94⅛	109½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	87⅝	87½	96⅛	92¼	95	82½	93¼	63⅛
Tidewater Associated	..	17⅛	16⅝	23½	16⅛	17	21	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 30 representative petroleum stocks listed on the New York Stock Exchange was as follows:

May 9	58.08	Apr. 4	56.63	Feb. 26	60.83
May 2	57.13	Mar. 28	58.51	Feb. 21	60.26
Apr. 25	57.03	Mar. 21	58.03	Feb. 14	61.13
Apr. 18	57.42	Mar. 14	59.26	Feb. 7	60.51
Apr. 11	57.37	Mar. 7	59.34	Jan. 31	60.09

declared the regular quarterly dividend of 62½ cents, payable June 15 to stockholders of record May 16. In the preceding quarter an extra dividend of 12½ cents was paid.

The Vacuum Oil Co. declared an extra dividend of 50 cents and regular quarterly dividend of 50 cents, both payable June 20 to stockholders of record May 31. These dividends are the same as in the preceding quarter.

The Standard Oil Co. of Indiana has declared an extra dividend of 25 cents, in addition to the regular quarterly dividend of 62½ cents, both payable June 15 to stockholders of record May 16. These dividends are the same as in the preceding quarter.

The Associated Oil Co. has declared an extra dividend of 40 cents a share, payable July 25 to stockholders of record June 4, in addition to the regular quarterly dividend of 50 cents, payable June 25 to stockholders of record June 4. Similar extra was paid in the preceding quarter.

The Ohio Oil Co. declared an extra dividend of 25 cents, in addition to the regular quarterly dividend of 50 cents, both payable June 15 to stockholders of record May 14. In each of the three preceding quarters, an extra dividend of 50 cents was paid.

NORTH AND WEST TEXAS

(Continued from Page 39)

sand at 1,288-1,308 feet following a 5-quart shot.

Tower & McKenna's No. 8 Shore was good for 305 bbls. at 1,308-29 feet; No. 10 made 375 bbls. at 1,297-1,317 feet. Monnelea Oil Co.'s No. 1 Baugh was dry and abandoned at 1,010 feet. Shoup, Jr.'s No. 7 John Byler was also a failure at 1,350 feet, as was Southern Drilling Co.'s No. 1 Morris at 1,275 feet.

The Texas Company's No. 39 Lowe made 500 bbls. at 1,275-99 feet; No. 43 Lowe made 700 bbls. at 1,285-1,311 feet. Wentz Oil Corp.'s No. 14 Shore was shot with 5 quarts in sand at 1,310-36 feet and was good for 45 bbls. Hines & Hines' No. 1 Miller was plugged as dry at 1,020 feet.

Callahan County

Syndicate Oil Co.'s No. 1 Berry was dry and plugged at 1,221 feet.

Coleman County

Milham Corp's No. 1 Halbert was dry and abandoned at 3,035 feet. Monroe Production Co.'s No. 1 Caton made 2,000,000 feet of gas from sand at 1,349-64 feet after plugging back 1,702 feet. Taylor and others' No. 1 Reaves was a failure at 1,540 feet.

East'and County

Barkley & Crotty's No. 1 Terrell was dry and plugged at 3,570 feet. So was Gholson and others' No. 1 Parish, at 3,500 feet, and Hickey & Haynes' No. 1 Higgins, at 1,540 feet.

Livingston and others' No. 1 Hazel made 40 bbls. from lime at 3,415-50 feet. Simms Oil Co.'s No. 1 Lyerla was dry and abandoned at 3,350 feet. Teatsworth and others' No. 3 Johnson was completed for 4,000,000 feet of gas at 1,755-72 feet.

Shackelford County

Amerada Petroleum Corp.'s No. 3 Davis was dry and plugged at 2,150 feet. Hope Oil & Gas Co.'s No. 1-B Reynolds was also a failure at 1,520 feet. Humble Oil & Refining Co.'s No. 1 Davis was plugged as dry at 2,040 feet. Two other dry holes in this county were Pettit and others' No. 1 Ackers at 2,267 feet and World Oil Corp.'s No. 1 Hill at 4,125 feet.

Stephens County

Goodwin Drilling Co.'s No. 1 Stephens was dry and plugged at 2,467 feet. Meredith & Thomas' No. 1 Chesley was abandoned at 1,560 feet.

Wichita County

Bridwell & Heydrick's No. 1 Franks and others was dry and abandoned at 1,981 feet. C. H. Clark and associates' No. 2 Waggoner is a 2-bbl. well at 793-800 feet. Continental Oil Co.'s No. 12-C Waggoner is a 25-bbl. well from sand at 1,266-71 feet. Continental Oil Co. and Maer & Staniforth's No. 1 Henson was dry and abandoned at 1,973 feet. Continental Oil Co. and Perkins & Cullum's No. 1 Ancell was dry and abandoned at 1,975 feet.

O'Donohoe & Gates' No. 2 Love is making 30 bbls. daily from sand at 1,811-18 feet. Pace and associates' No. 2 Mitchel was dry and abandoned at 1,872-81 feet. Panhandle Refining Co.'s No. 10 Riley Griffin is pumping 70 bbls. of oil and 15 bbls. of salt water from sand at 1,793 to 1,805 feet. Petroleum Producers Co.'s No. 1 Chilson was dry and abandoned at 1,919 feet. The Texas Company's No. 325 Waggoner is a 4-bbl. pumper in sand at 530-40 feet.

Wilbarger County

Fain & McGaha Oil Corp.'s No. 1 Waggoner is a dry hole at 2,027 feet and was abandoned. Humble Oil & Refining Co.'s No. 19-H Waggoner is making 106 bbls. from sand at 2,376-70 feet. Magnolia Petroleum Co.'s No. 11 Piper was dry and abandoned at 2,135 feet. Phillips Petroleum Co.'s No. 3 Waggoner is pumping 71 bbls. from sand at 2,603-07 feet.

Throckmorton County

Red Bank Oil Co.'s No. 4 Parrott was the only completion. It was good for 902 bbls. initial from sand at 3,909-35 feet.

Young County

Ahlstrom and associates' No. 1 Farmer was dry and abandoned at 832 feet. Christie and associates' No. 1 Christ an was dry and abandoned at 820 feet. Panhandle Refining Co.'s No. 9 Mathews was dry and abandoned at 790 feet. Reed and associates' No. 1-C Jack is a 200-bbl. well in sand at 511-40 feet. Nash & Windfohr's No. 1 Ware is pumping 20 bbls. of oil and 3 bbls. of salt water from sand at 2,133-64 feet.

WEST TEXAS COMPLETIONS

Concho County

Gene Mays and others' No. 1 Hartgrove was dry and abandoned at 2,002 feet.

Cochran County

J. C. Whicker's No. 1 Landon was a failure at 1,550 feet.

Fisher County

Four dry holes were recorded in Fisher County this week. They are: Hucony Gas Co.'s No. 1 Langford, at 3,258 feet; Californa Co.'s No. 1 Anderson, at 3,375 feet; same concern's No. 1 Maggenheimer, at 3,550 feet; and Zoch and others' No. 1 Clayton, at 3,802 feet.

Howard County

Lockhart & Co.'s No. 2 Otis Chalk-A swabbed 30 bbls. at 1,545-1,657 feet after a 20-quart shot. Mar and Oil Co.'s No. 7 Chalk-A swabbed 50 bbls. at 1,564-71 feet; No. 4 H. R. Clay swabbed 100 bbls. at 1,764-84 feet; No. 5 swabbed 20 bbls. after a 20-quart shot at 1,782-93 feet; No. 5 Clay-A was shot with 20 quarts at 1,771-85 feet, total depth being 1,807 feet, and afterward flowed and swabbed 113 bbls. Midwest Exploration Co.'s No. 1 Clay was swabbing 25 bbls. daily from pay at 1,764-91 feet, but will be shot.

Jones County

Three dusters were chalked up in Jones County, as follows: Grisham & Hunter's & Wildman's No. 1 Mrs. F. G. Phillips, at 3,071 feet; Hart & Cole's No. 1 Cranston, at 3,407 feet; and World Oil Corp.'s No. 1 Clark, at 3,065 feet (corrected steel line measurement).

Mitchell County

California Co.'s No. 4 C. M. Adams, Lease 2, topped the pay at 2,925 feet and was drilled to 3,058 feet. It was shot with 340 quarts at 3,025-2,922 feet and swabbed 112 bbls. Same concern's No. 3 Petiflls, Lease 2, swabbed 122 bbls. after a 340 quart shot at 2,925-3,060 feet, total depth being 3,074 feet.

Reagan County

Big Lake Oil Co.'s No. 57 University made 37 bbls. at 2,975-3,001 feet; No. 72 made 239 bbls. at 2,906-20 feet; No. 108 made 933 bbls. at 3,040-83 feet; No. 109 flowed 1,235 bbls. at 2,870-85 feet; No. 113 made 300 bbls. at 2,948-57 feet; No. 114 made 100 bbls. at 2,978-99 feet; No. 116 made 85 bbls. at 2,962-72 feet; and No. 117 made 50 bbls. at 2,954-75 feet.

Texon Oil & Land Co.'s No. 8-A University, Group 1, made 25 bbls. at 2,900-14 feet.

Taylor County

City of Abilene's No. 1 fee was dry and abandoned at 2,290 feet. The location for Mitchell & Breene's No. 1 Tittle was abandoned also.

Winkler County

Southern Crude Oil Purchasing Co.'s No. 1 Hendricks-C was completed for 1,006 bbls. at 2,915-88 feet.

NORTH CENTRAL TEXAS

Estimated Production for Week Ending May 7, 1927

	This Week	Last Week
Ranger District—		
Brown County	22,415	20,890
Callahan County	4,245	4,470
Coleman County	1,344	1,350
Comanche County	1,672	1,580
Palo Pinto County	518	515
Ranger	9,832	10,060
Shackelford County	11,353	11,805
Stephens County	10,425	10,315
Total Ranger district	61,704	60,985
Wichita Falls District—		
Archer County	29,560	29,505
Baylor County	90	90
Clay County	700	690
Cooke County	2,280	2,180
Jack County	570	570
Montague County	12,845	12,950
Throckmorton County	2,570	1,680
Wichita County	31,420	31,470
Wilbarger County	13,510	13,335
Young County	11,305	11,305
Total Wichita Falls district	104,850	103,775
West Texas District—		
Big Lake Field	26,903	25,210
Crane County	44,779	45,230
Crockett County	1,577	1,630
Ector County	18	20
Garza County	4	5
Glasscock County	30	0
Howard County	2,400	2,920
Jones County	2,368	2,245
Loving County	20	20
Mitchell County	4,019	3,970
Pecos County	14,763	500
Scurry County	23	25
Upton County	19,332	19,330
Winkler County	1,211	1,440
Total West Texas district	117,447	102,546
Grand total N. and W. Tex.	284,001	267,305
Increase		16,696

ATLANTIC PORT RECEIPTS SHOW NORMAL INCREASE DURING APRIL

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, May 9.—Receipts of crude and refined oil at Atlantic Coast ports during April totaled 18,477,000 bbls., a daily average of 611,000 bbls. The daily average represents the largest since June, 1926, when the receipts averaged 635,000 bbls a day. April receipts also show a gain in total and daily average compared with March and April, 1926.

Receipts in April from the Gulf Coast are estimated at 11,734,000 bbls., a daily average of 388,0000, compared with 10,841,000 bbls., a daily average of 345,000 bbls., in March and 9,864,000, or 326,000 bbls. daily, in April, 1926.

Receipts from the Pacific Coast in April of 2,774,000 bbls., or 93,000 bbls. daily, represent a decline compared with March when the total was 3,164,000 bbls., and the daily average 103,000 bbls.

Imports from Mexico in April showed a substantial increase compared with March. The gain was 939,000 bbls. As compared with April, 1926, however, there was a decline of 1,732,000 bbls.

Imports from South America fell off in April compared with March, but showed a substantial gain over April, 1926. The total for April this year was 1,882,000 bbls., and daily average, 61,000 bbls. This compares with a total of 2,462,000 bbls., or 81,000 bbls. daily, in March of this year. In April, 1926, the total was 600,000 bbls. and the daily average 20,000 bbls.

The following table shows estimated total and daily average receipts of crude and refined oil at Atlantic ports (in barrels):

	Apr., '27	Mch., '27	Apr., '26
Baton Rouge & N. Orleans	1,000,000	1,470,000	2,700,000
Pt. Arthur, Sabine, Beaumont	5,367,000	4,721,000	4,104,000
Texas City, Houston and Galveston	5,367,000	4,650,000	3,060,000
Gulf Coast	11,734,000	10,841,000	9,864,000
Pacific Coast	2,774,000	3,164,000	2,787,000
Mexico	2,087,000	1,148,000	3,819,000
S. America	1,882,000	2,462,000	600,000
Total	18,477,000	17,615,000	17,070,000
Daily Averages			
Baton Rouge & N. Orleans	32,000	47,000	88,000
Port Arthur, Sabine and Beaumont	178,000	149,000	135,000
Texas City, Houston and Galveston	178,000	149,000	103,000
Gulf Coast	388,000	345,000	326,000
Pacific Coast	93,000	103,000	92,000
Mexico	69,000	36,000	126,000
South America	61,000	81,000	20,000
Total	611,000	565,000	564,000

The shipping areas of Texas City and Port Arthur seem to be running close to each other for supremacy in the shipping of oil to Atlantic ports. In both April and March of this year the shipments were almost exactly the same. Compared with a year ago, the Texas City district shows a greater increase than Port Arthur, and it is now a question whether the former will run ahead of the older shipping port in the coming months.

The recent decline in oil prices does not seem to have made any radical change in the course of oil shipments to the Atlantic Coast. The remarkable feature, perhaps, is that receipts have continued to show a normal increase despite the fact that eastern refiners are taking much more oil by pipe line than formerly.

In spite of increasing domestic oil production, eastern factors do not appear to have reduced their importance of oil to any extent.

EXPLAIN CURTAILMENT OF CRACKING UNITS

(Continued from Page 157)

more of these stills were built, until in 1920 the company had in operation 346 Burton stills with a total potential daily production in excess of 1,000,000 gallons of gasoline. From being a burden gas oil had become a desirable product in its new role as a secondary but lightly important source of gasoline.

Although the Burton process represented a tremendous advance in the efficiency of refining, it was operated under the serious handicap of requiring a clean, distillate product as charging stock. This limitation worked against obtaining the fullest efficiency from cracking, since it was necessary for the residual product from the crude oil to undergo complete primary distillation to get proper charging stock. Recognizing this limitation, the Standard Oil Co. of New Jersey attacked the problem of developing an improved method which could use the residue from crude oil or even heavy fuel crudes as charging stocks. The reward was the elimination of losses unavoidable in the operation of the original Burton stills

The tube and tank process resulted from this research and development work and the first commercial units were put into operation in 1920. With subsequent refinements, this process has demonstrated its superiority because of its large unit capacity and its flexibility which permits the use of any type of distillate, heavy residue or crude oil.

From 1912, when the first pressure still was put into operation at Whiting, Ind., down to the present the industry has been subjected to alternating periods of oversupply or threatened shortages of crude oil. Nevertheless for 10 years following the introduction of the Burton process there was at all times a market for as much gasoline as could be produced and generally there was a margin between the market price of fuel oil and the finished product, gasoline, sufficient to make it profitable to proceed with further installations of cracking equipment.

Too Much Gasoline

A change in this regard began to be noticed with a depression in business in 1921-22. At the beginning of 1921, there was on hand a reserve supply of 11,000,000 bbls. of motor fuel. By January 1, 1927, this had increased to 39,000,000 bbls. Of late then, it had been painfully apparent to the industry that it

has supplied itself with surplus capacity for the production of motor gasoline.

Other factors than the overproduction of crude oil contributed to this rapid increase. The recovery from casinghead and refinery gases has been trebled and a big reduction in the loss of light fractions has been brought about by the use of gas-tight tankage all the way from the lease to the consumer. However, the most important contribution in this regard was the increase in the production of cracked gasoline. At the end of the war, this amounted to 10 per cent of our total supply of motor fuel, whereas last year cracked gasoline constituted 30 per cent of the supply.

Like a chess player, the refiner studies out his own moves in relation to the probable changes on the board before him. He went to the expense of building and installing modern cracking units for the purpose of increasing the percentage of gasoline obtainable from a given amount of crude oil. The economic operation of these units rested on a wide enough margin of profit between the wholesale markets for gasoline and the cost of fuel oil or gas oil to justify the expense of running the cracking stills. When either the market for fuel oil strengthened or when because of the increase in the supply of light crude oil of high gasoline content refiners were in a position to make gasoline at a lower cost than it could be obtained from gas oil, the cracking units became temporarily unprofitable.

The situation for some months has been working directly against the further construction of cracking stills and now it is not sound business judgment to continue to operate a large part of them. The country is getting an oversupply of gasoline and much of it is coming from the increased production of high-gravity crude oils subjected to straight distillation. To run the residual oils through cracking coils would merely add to the daily surplus going into storage. For that reason, a great many cracking units have been shut down throughout the country. The Standard Oil Co. of New Jersey has shut down 200 pressure stills at its plant at Bayway, 20 at Charleston and a like number at Baltimore, while the Standard Oil Co. of Louisiana has discontinued running 100 stills, making a total of 340 out of commission. It has been necessary to reduce operating forces correspondingly. No one knows how long the situation as to supply and demand will continue like this. It is much better to store fuel oil and gas oil than crude direct from the well because in the former case there is no evaporation loss, the more volatile fractions having been taken off in the first distillation.

If the industry again is faced with a deficiency in the current supply of crude oil, putting a premium on fuel oil as a source for a large part of our gasoline, cracking will again take up the slack.

OIL ENGINE OPERATION

In connection with the investigation of the practicability of the oil engine for the propulsion of aircraft which has been made for the British air service, some experiments have been made in regard to the effect of admitting small quantities of hydrogen and of coal gas with the air, and also on the effect of reduced air intake pressure on the performance of an oil engine. A paper on these tests was presented before the Institution of Automobile Engineers and the Royal Aeronautical Society by G. F. Mucklow, M. Sc. The engine used in these tests was a Crossley single-cylinder solid injection heavy oil engine of 14-inch bore and 23-inch stroke, having a volumetric compression ratio of 10.3 to 1 and being rated at 66 horsepower at 211 revolution per minute.

MOST SHIPS USING OIL

Of 6,000,000 tons in the world's navies, the greater part now uses oil. Of the merchant marine, already 33 per cent uses oil. According to a statement recently issued, a majority of the newly-built tonnage from British shipyards is composed of oil burning vessels.

COLONEL HUMPHREYS KILLED BY ACCIDENTAL DISCHARGE OF GUN

DENVER, Colo., May 8.—Col. A. E. Humphreys, nationally known oil producer and wildcatter, was accidentally shot and killed today by one of his own guns while preparing for a hunting trip to Wagon Wheel Gap, Colo. A charge from a shotgun, which he must have believed was unloaded, tore away a part of his jaw and some of the shot entered his brain. The accident occurred in his home. Members of his household, hearing the discharge of the gun, hurried to his room and soon afterward the wounded man was on the way to Mercy Hospital, where he died within two hours.

A. E. Humphreys was one of the most interesting figures the oil business has known. He operated successfully in Muskogee County and later in the Billings Field in Noble County, Oklahoma, about 10 years ago, but he came into great

COL. A. E. HUMPHREYS

prominence when the organization he headed opened the Mexia Field in Texas and later aided in the development of the Powell Field, following this with the discovery of the Wortham Field. Since Wortham, Colonel Humphreys has been actively engaged in wildcatting in the Gulf coastal regions with the aid of geophysical instruments.

Colonel Humphreys was not interested in the production of oil. He was a born pioneer, who, when he discovered oil and developed a pool to a stage where he could place a value on it, sold to one or another of the large producing companies always at a great profit to himself, yet at a price where the purchaser was enabled to make a profit on the investment.

Colonel Humphreys was not only a daring plunger and a big business man. He made money for all that were associated with him in business, and some became very wealthy while members of his organization. His Humphreys Oil Co., Boyd Oil Co., Humphreys-Boyd Oil Co. and Humphreys Corp. were all profit-making companies. Colonel Humphreys dominated all of them. His was the last word, and little of importance was done without his sanction.

But Colonel Humphreys' greatest trait of character was his love for his fellow man; especially for those who were unfortunate. He created the Humphreys Foundation, backed by $1,000,000, to administer charities in West Virginia, his native state, and Ohio. The foundation conducts homes for homeless children and aged women. Churches in the East and in Texas were large beneficiaries of the Colonel's generosity. He built a Salvation Army citadel in Charleston, W. Va. Privately, he gave away much money to people in need.

A great compliment to Colonel Humphreys and his organization was paid by the large operating companies in Texas. His success in locating oil and opening big fields gave the Humphreys interests a very high place among oil operators, and whenever the Colonel started on a leasing campaign he was followed by the land men of the Standard, Gulf, Texas and other big interests, who "played" the territory he favored. The Humphreys organization was one of the first to lease in East Texas on a large scale, and now every big Mid-Continent company that operates in that State owns blocks of leases in that territory.

In the death of Colonel Humphreys, the oil industry loses its most picturesque figure since the days of Theodore N. Barnsdall, also a great pioneer and a man of charitable attributes. Like Mr. Barnsdall, Colonel Humphreys was a giant in stature and a tremendous worker, and when the end came both left fortunes running into several millions of dollars and a reputation for daring and perseverance that will long live.

Colonel Humphreys is survived by his widow and two sons, A. E., Jr., and Ira B. Humphreys.

TEXAS PANHANDLE

(Continued from Page 40)

weeks ago the same company opened the play there with a good well. None of the new wells emulated the performance of the first well. No. 2 H. Schafer, NW cor. NE Section 87, Block 4, made 907 bbls. initial from the pay in lime and granite wash at 2,940 to 3,045 feet. No. 3 H. Schafer, NW cor. NE Section 86, Block 4, is a 395-bbl. well from lime and granite wash at 3,120-62 feet. No. 4 H. Schafer, NW cor. Section 86, Block 4, had the pay in lime and granite wash at 3,132 to 3,220 feet and started off making 102 bbls. daily.

Gray County

Approximately 2 miles south of the Wilcox Pampa Pool, Blackwell & McGee's No. 1 Bowers, Section 92, Block B-2, swabbed 210 bbls. the first 10 hours from granite wash at 2,965 to 3,030 feet. About 1½ miles west of production in the same pool, Humble Oil & Refining Co.'s No. 1 T. B. Haggard, SW cor. Section 112, Block 3, swabbed 105 bbls. the first 24 hours from sandy lime at 3,159-92 feet; total depth 3,230 feet. The production of the well averaged 67 bbls. daily for seven days. Eight-inch was set at 3,005 feet. In the Wilcox-Pampa Pool proper, Wilcox Pampa Oil Co.'s No. 22 Worley & Reynolds, Section 62, Block 3, flowed 300 bbls. initial from granite wash at 2,808-53 feet.

Hutchinson County

Routine completions in Hutchinson County were on an upward trend during the week and 15 completions were reported for that county.

Cockrell & McIlroy Oil Co.'s No. 6 H. E. Smith and others, Section 14, Block Y, is a 50-bbl. well after a 400-quart shot at 2,903-83 feet. In the same section, Dixon Creek Oil Co.'s No. 41 H. E. Smith and others is swabbing 150 bbls. of oil and 400 bbls. of salt water from lime at 2,883 to 2,930 feet. McIlroy Oil Co.'s gusher, No. 2 Cockrell, Section 4, Block B-3, which started off at the rate of 630 bbls. per hour and flowed at that rate for four hours, was pinched in and completed as a 7,800-bbl. well from three feet of lime pay topped at 2,922 feet.

Eight wells were completed by the Phillips Petroleum Co.'s No. 1 Johnson Brothers (Easter), Section 69, Block 46, was shot with 80 quarts in lime at 2,684 to 2,712 feet and is swabbing 100 bbls. daily. No. 1 Johnson Brothers (Graham), Tract 5, M. Whitley Survey, is swabbing 100 bbls. after a 100-quart shot at 2,930-90 feet. No. 7 J. A. Whittenburg (Patsburg), is doing 75 bbls. daily after a 100-quart shot at 2,895 to 2,930 feet. No. 8 J. A. Whittenburg (Patsburg), Section 67, Block 46, is swabbing 300 bbls. daily after a 70-quart shot at 2,879 to 2,909 feet; total depth 2,930 feet. No. 10 J. A. Whittenburg (Patsburg), same section, is swabbing 150 bbls. daily after a 110-quart shot in lime at 2,871 to 2,909 feet. No. 13 J. A. Whittenburg (Patton), M. Whitley Survey, is swabbing 50 bbls. after a 60-quart shot at 2,842-63 feet. No. 21 on the same lease is swabbing 50 bbls. daily after a 80-quart shot at 2,890 to 2,918 feet. No. 23 J. A. Whittenburg (Patton), M. Whitley Survey, swabbed 300 bbls. initial after a 80-quart shot at 2,890 to 2,918 feet.

Prairie Oil & Gas Co. and associates' No. 8-C Johnson Brothers, Section 69, Block 46, is a 10-bbl. well from lime at 2,880 to 2,918 feet. Skelly Oil Co.'s No. 5 Johnson Brothers (Cunningham), was shot with 55 quarts at 2,916-40 feet, and is swabbing 50 bbls. daily. Spring Creek Oil Co.'s No. 1-A H. E. Smith and others, Section 7, Block Y, was shot with 430 quarts at 2,857 to 2,947 feet, and is swabbing 100 bbls. daily. Sunburst Oil Co.'s No. 4 H. E. Smith and others was shot with 120 quarts at 2,965 to 3,048 feet and is swabbing 200 bbls. daily.

Moore County

Humble Oil & Refining Co.'s No. 1 Kilgore, Section 28, Block 44, was plugged back from 3,867 feet to 3,750 feet and completed as a 10,000,000-foot gas well from 2,960 to 3,010 feet and 3,045-85 feet.

Wheeler County

Continental Oil Co.'s No. 2 J. H. Jackson, Section 11, Block 27, was plugged and abandoned at 2,378 feet. In the south end of the Shamrock Pool, Magnolia Petroleum Co.'s No. 3 E. C. Johnson, Section 40, Block 24, is flowing 15 bbls. per hour from granite wash at 2,285 to 2,336 feet. Northwest of the Shamrock Pool, Piney Oil Co.'s No. 2 J. A. Clark, Section 58, Block 24, went into salt water at 2,388 feet and was plugged and abandoned. The well had a showing of oil at 2,340-43 feet. The Texas Co.'s No. 1 W. E. Bentley, Section 42, Block 24, flowed 666 bbls. the first 24 hours from sandy lime and granite wash at 2,346-51 feet. The well had 3,000,000 feet of gas at 2,306 feet.

DAILY AVERAGE PRODUCTION
Week Ending May 7, 1927
HUTCHINSON COUNTY

Company—	Wells	Daily Avr.
Antelope Creek Oil Co.	1	10
Alaska Pet. Co.	1	0
Amerada Pet. Corp.	9	710
American Ref. Co.	8	500
Apex Oil Co.	2	475
Atlantic O. P. Co. (was Grimes & Watts)	1	35
Badger Oil Co.	2	75
Bain et al	1	80
Barnsdall Oil Co.	3	210
R. G. Barnum	1	25
Black Diamond Oil Co.	1	10
Blockins & Kistler	2	150
Buffalo Oil Co.	2	70
Canadian River Oil Co.	6	220
Center Dome Oil Co.	2	10
Centerfield Oil Co.	1	5
Coble-Whittenburg	4	350
Continental Oil Co.	1	0
Currie Bros. & J. R. Phillips	4	475
Cockrell & McElroy	6	5,100
Collier & Taylor	1	0
Delmar Oil Co.	2	15
Derby Oil Co.	8	2,200
Devonian Oil Co.	9	500
Dixon Creek Oil Co.	42	10,040
Dominion Oil Co.	1	5
Double Five Oil Co.	1	35
Donald Oil Co.	1	5
Douglas Oil Co. and Cline	2	10
E. J. Dunnigan et al	2	145
Echo Oil Co.	4	1,800
Empire Gas & Fuel Co.	27	2,710
Fly Blackburn Oil Co.	2	70
Four Y Oil Co.	1	10
Franterouse & Wetzel	2	50
Gates Oil Corp. (F. E. Kistler)	4	140
Goldelline Oil Co.	7	600
Gopher Oil Co.	1	20
Golding & Phillips	1	0
Gulf Prod. and Panhandle Ref.	54	5,700
Gulf Prod. Co.	36	3,910
L. R. Hagy	1	0
Heywood et al	1	5
J. K. Hughes Dev. Co.	22	1,350
Holmes, Currie & McKnight	3	200
W. H. Holmes	2	130
Homestead Oil Co.	1	10
Hutchinson County Oil Co.	1	0
Dan A. Japhet	6	650
Julian Pet. Corp. (Canyon)	5	700
Kistler Oil Co.	4	500
Kistler & Lenix	2	425
Lenix Oil Co. et al	1	50
J. H. Lenix	1	10
Lenix & Patterson	2	450
Lucky 10 Oil Co.	4	50
Magic 80 Oil Co.	1	10
Manhattan Oil Co.	1	25

Marland Oil Co.	57	3,300
Midwest Explin. Co.	20	3,100
Minnehoma Oil Co. and Kistler	3	1,000
McMan Oil & Gas Co.	25	3,000
McIlroy & Herring	6	750
S. D. McElroy	4	125
S. D. & W. W. McIlroy	8	700
McIlroy Bros. et al	3	150
McIlroy Oil Co.	2	3,600
J. H. Middleton	4	140
Mudge Oil Co.	1	5
Fain-McGaha Oil Corp.	2	115
Newby Oil Co.	2	50
New Domain Oil Co.	3	85
Pantex Oil Co. (Westex)	9	1,100
Phillips & Heywood	3	620
Panhandle Oil Co.	1	0
Paramount Oil Co.	1	1,150
J. R. Phillips et al	5	1,600
Phillips Pet. Co.	212	25,375
Prairie O. & G. and Phillips Pet. Co.	67	9,500
Plains Drilling Co.	1	10
Pure Oil Co.	3	400
Relief Oil Co.	3	420
Henry Riley	1	0
Riley & Holmes	2	150
Rock Island Oil Co.	1	0
Roxana Pet. Co.	9	500
Ryan Pet. Corp.	4	250
Skelly Oil Co.	26	2,175
Skiatex Oil Co.	7	795
J. L. Smith	2	175
Smith & Barnum	2	25
Southwestern Oil & Dev. Co.	6	790
Spring Creek Oil Co.	5	400
Summit Oil Co.	3	250
Sunny Jim Oil Co.	5	225
Sunburst O'l Co.	3	175
Sunrise Oil Co.	1	0
Sweeney et al	1	50
J. A. Swindler & Son	1	10
The Texas Company	1	25
Tex-O Oil Co.	1	10
Travelers Oil Co.	3	300
Triangle Oil Co.	5	800
J. D. Ward et al	3	75
White Eagle Oil & Ref. Co.	26	2,200
Total Hutchinson County	887	106,715
Average per well		120.3
Carson County		
Amarillo Oil Co.	1	0
American Ref. Co.	9	650
Champlin Ref. Co.	5	420
Delmar Oil Co.	1	35
Empire Gas & Fuel Co.	3	200
Gates Oil Corp.	1	5
Gulf Prod. Co.	19	1,050
Hughes Dev. Co.	1	50
Magnol'a Pet. Co.	1	100
Marland Oil Co.	21	1,250
Marston Oil Co.	1	100
McMan Oil & Gas Co.	9	1,960
Nunn & McAuley	6	1,000
Parks et al	3	400
Prairie Oil & Gas Co.	6	3,250
Republic Prod. Co.	1	10
Roxana Pet. Corp.	12	1,400
W. W. Silk et al	2	50
Skelly Oil Co.	7	2,100
Southwest Oil & Dev. Co.	1	10
Sunny Jim Oil Co.	2	10
The Texas Company	14	400
Total Carson County	127	14,450
Average per well		113.7
Gray County		
Blackwell & McGee	1	100
Canyon Oil Co.	1	5
Empire Gas & Fuel Co.	3	75
Gulf Prod. Co.	14	1,100
Humble Oil & Ref. Co.	11	600
Magnolia Pet. Co.	19	400
McMan Oil & Gas Co.	10	490
Marland O'l Co.	1	20
Nabob Oil Co.	1	80
Osborne & Daniels	1	10
Phillips Pet. Co.	7	600
Prairie O. & G. and Atlantic & Shamrock	15	1,200
Pure Oil Co.	5	250
Roxana Pet. Corp.	1	25
Sun Oil Co.	3	90
The Texas Company	5	290
Travis et al	1	700
Wilcox-Pampa Oil Co.	23	2,600
Young et al	1	10
Total Gray County	127	8,645
Average per well		68.8
Moore County		
Cadman et al	1	0
Potter County		
Amarillo	1	30
Wheeler County		
Continental Oil Co.	3	390
Gibson Oil Corp.	7	600
Laycock et al	1	5
Magnol'a Pet. Co.	5	350
Marland Oil Co.	1	350
Mid-Continent Pet. Corp.	1	10
Fain & McGaha	1	35
Mid-Kansas Oil & Gas Co.	3	400
Midwest Exploration Co.	2	5
Tidal Oil Co.	1	500
World Oil Co.	2	35
The Texas Company	2	400
Total Wheeler County	29	3,080
Average per well		106.2
Grand total Panhandle	1,170	132,920
Average per well		113.6

MEXICAN DECISION DELAYED

A ruling of the Mexican Supreme Court, that amparos granted to foreign oil companies by the lower district courts will have to be referred to those courts again for decisive judgment, has had the effect of postponing action for some months until the matter can come to the Supreme Court again. The basis of the Supreme Court decision was that the lower courts had granted only a partial decision conceding certain points in favor of the companies and others in favor of the government, rather than making a complete decision one way or the other.

OKLAHOMA GASOLINE MARKET UNCHANGED

(Continued from Page 28)

The Standard of Indiana's position in this highly competitive situation has not differed materially from that of any other major marketing organization, which means that the company reduced its prices in order to meet competition and end the local price wars which have been increasing in number throughout its territory.

Considered from this angle and discounting the possible change in the crude market, the Indiana company's action should have little effect in the gasoline tank car markets of Oklahoma and other Mid-Continent refinery groups. The jobbers still have a normal margin between the tank car and tank wagon prices with which to operate and, with the gasoline season at hand, the increase in the volume of their business should tend to offset the losses due to the narrower margins.

Kerosene Situation

Market observers have considerable difficulty in analyzing the kerosene situation. The improvement in that product since the first of the month is a surprise to many sellers and buyers. Apparently a late spring has aided the demand for tractor fuel. Rehabilitation work in the flooded agriculture areas of the Mississippi Valley also is expected to result in an excellent demand over the remainder of May.

Bureau of Mines reports covering the first three months of this year show that both gasoline production and consumption are less than the same period last year. Production for the three-month periods dropped 1,018,000 bbls. or 7 per cent. Exports declined 958,000 bbls. and domestic consumption 351,000 bbls. making a total decline in demand of 1,309,000 bbls. Stocks on March 1 were 8,753,000 bbls., or approximately 25 per cent greater than the same date last year. The lower prices of April apparently have stimulated both export and domestic buying in the Mid-Continent accounting for the May advances.

Gasoline and Naphtha

The 58-60 U. S. Motor gasoline was holding firm at 6½ cents on Tuesday. The product advanced from a minimum of 6¼ cents to 6½ cents the latter part of last week. The movement at 6½ cents was encouraging and it is probable that if the tank wagon reductions had not materialized several refiners would have advanced to 6¾ cents before the end of the week.

The higher gravity grades did not advance along with U. S. Motor. However, the cut price material was absorbed last week and the market is firm at present quotations. The 450 endpoint gasolines advanced slightly with no change in naphtha.

Kerosene and Distillates

The situation in regard to kerosene has already been explained. The 41-43 grade advanced to a low of 4⅜ with the low of 42-44 at 4⅝. Distillates also advanced slightly. Refiners who have refused to sell under 3½ cents for 38-40 were surprised to receive occasional orders during the past week. Quite a movement was reported at 3⅜. The strength in this product is partially due to the fact that many refiners have ceased to make the product. Part of the demand is coming from consumers who blend the product with naphtha to secure a product satisfactory for tractor fuel.

Natural Gasolines

The low on Grades A and AA the first of the week was 5 cents, with a few sales of A reported as high as 5¼ cents. Other grades experienced the same advance. Most of the increased demand is coming from buyers in the coastal areas. Mid-Continent refiners and Middle West jobbers have not increased their purchases. The gasoline is being moved to the Gulf Coast for the large refiners in that section or moved from there by water to the Atlantic Seaboard.

Fuel and Gas Oils

The gas oils market continued active and very little material was available under 2¾ cents the first of the week. The new buying continues to come largely from manufacturers of artificial gas. Chicago and Detroit buyers have been especially active.

Fuel oil prices were practically unchanged in Oklahoma during the week. Trading was light, sellers refusing to give further price concessions. The resistance to lower prices is encouraging to many refiners and predictions are being heard that fuel oil prices are at or near bottom.

Lubricating Oils-Wax

There were no developments worthy of special note in the lubricating oil and wax markets. Rarely is any complaint heard regarding the movement of any of the oils. The writer has been unable to check a spot sale in Oklahoma wax for the past two weeks. The general idea of the market is from 2½ to 2¾ cents.

PETROLEUM HARBORS SUGGESTED BY BUREAU

In connection with the problem of pollution of coastal waters by oily wastes, the building and use of specially designed petroleum harbors has been suggested by the United States Bureau of Mines. The main advantage of a petroleum harbor is that it provides facilities for refineries, fuel oil stations, and storage terminals at one locality in a port. All oil spillage is kept within a restricted area, and piles and bulkheads throughout the remainder of the port are not incrusted with residues. This minimizes the fire hazard to the port in general, and a fire originating in the oil-polluted area would be confined there. Such a harbor also eliminates the transportation of oil by barges over the entire port. The main obstacle to constructing a petroleum harbor is the enormous cost. In congested districts, as New York City, necessary space in a convenient location would be difficult to obtain. Should space be found, the cost of transferring or rebuilding storage terminals and fueling stations in one locality would alone be prohibitive without even considering refineries.

Petroleum harbors may be of different designs, but the general plan of all is an inclosed water area into which ships may enter to load or unload cargoes of oil or to obtain oil fuel. The entrances to these inclosed water areas are protected by a floating boom, so that any oil spilled on the water through accident will be confined to a small area and not spread over the entire harbor or port.

15,000,000-FOOT GAS WELL IN WILDCAT AREA

SHREVEPORT, La., May 10.—The Marine Oil Co. late Tuesday afternoon got a 75,000,000-foot gas well in the wildcat Lawson-Urbana district of Union County, Arkansas, when it tested No. 1-B Winn, Section 10-18-13, at 2,690 feet.

EFFECTIVE USE OF GASOLINE

Automotive designers will undoubtedly be forced before long to deal seriously and properly with the carburetion problem, says the Automobile Engineer of London. Enormous quantities of gasoline might be saved yearly if it were only used with some degree of efficiency. The state of the air in the streets of towns today is simple testimony to the faultiness of combustion processes in the motor car today. The fact that the average car needs decarbonization every 3,000 or 4,000 miles, often sooner, is a lamentable confession of failure. The problem is divided into two parts: the provision of mechanism for accurate and constant metering at the varying speeds and conditions, and adequate and proper vaporization, so that the maxture is homogeneous and sufficiently gaseous at all speeds and conditions. Both processes must be carried out in a constant manner and take place uniformly, irrespective of external conditions, such as summer or winter running and varying engine temperatures, speeds and loads.

Venezuela Produced 4,000,000 Barrels in April—Mexico Slips

WASHINGTON, D. C., May 7.—Low petroleum exports are linked with dullness in the automobile trade of Mexico during April in a report by George Wythe, acting commercial attache at Mexico City, in a cablegram received by the Department of Commerce.

In Venezuela, petroleum development continued during the month of April at a rapid rate in the Maracaibo region, and it is estimated that the April production was 4,000,000 bbls., as compared with 2,685,000 bbls. in April, 1926.

SHREVEPORT MARKETS ARE MUCH IMPROVED

SHREVEPORT, La., May 9.—The opening of a new week witnessed a much improved outlook for refinery markets of the Arkansas-North Louisiana district, particularly gasoline. The continued strengthening of this product the past week was taken by refiners as a signal to advance their quotations. Monday, two refiners were quoting 6¾ cents. This so far has attracted very little new business with other refiners still selling at 6½ cents.

Other products continued unchanged except for a possible firmer tone in gas oils, due principally to an expected wave of buying on the part of jobbers and marketers for next season's requirements. Fuel oil is inactive, but due to its scarcity is fairly firm in price from $1.10 to $1.15.

The gasoline situation is largely a reflection of the continued shortage of tank cars held up by floods and irregular railroad service into the affected zones. While consumption of gasoline in flooded zone has been curtailed to the limit, the demand locally and from northern states has taxed the shipping facilities of this district.

Inability of refiners to ship their products may result in some cutting of crude runs to stills in this district. The Crystal Oil Refining Corp. of this city already has taken the lead in curtailing production and today cut runs to stills from 10,000 to 6,500 bbls. daily. This new throughput schedule, or less, will continue indefinitely until shipping and marketing conditions improve.

A sharp curtailment of natural gasoline production in the Monroe gas field also is expected, as many plants there are in the flooded lowlands, while operations of others will be affected by the general shutdown in the field. The natural gasoline market, however, reflected very little change.

EASTERN FINANCIERS VISIT MID-CONTINENT

Elisha Walker, president of Blair & Co., headed a group of eastern financiers which visited the Mid-Continent properties of the Barnsdall Oil Co. this week. Besides Mr. Walker, there were Matthew C. Brush, chairman of the board of the American International Co. and a director of the Simms Petroleum Co.; Henry Lockhart, Jr., and Thomas Bragg of Blair & Co.

The party was taken on a motor tour from Tulsa to the Seminole Field, visiting en route the Barnsdall refinery at Okmulgee. From the Seminole Field they went to Shawnee, and had the experience of slumbering in a boom oil field town.

The firm of Blair & Co. became interested in the Barnsdall Oil Co. when that concern purchased the properties of the old Waite Phillips Co. The visiting party was very enthusiastic about the operations of the Barnsdall company and its prospects in the territory southwest of the Seminole Field where a vast amount of acreage acquired through the purchase of the Waite Phillips Co. is owned.

The party made the journey from New York to Tulsa and return in Mr. Walker's car, and left Tulsa on Tuesday night for the return trip eastward.

GASOLINE TANK WAGON PRICES LOWEST SINCE JANUARY 1, 1925

Not since January 1, 1925 has the average gasoline tank wagon price in The Oil and Gas Journal's 50 cities been as low as that of May 1. Over the month, from April 1 to May 1 the average dropped from 16.16 to 15.41 cents or .75 cent. This decline reflects the overproduction of crude oil and gasoline. The reduction of .75 cent per gallon in tank wagon prices represents a daily reduction in revenue from gasoline sales of approximately $250,000. On this same basis the loss to the industry is more than $7,500,000 per month. Comparing the average of May 1, 1927 and that of May 1, 1926 this year's price is 3.077 cents lower. Thus, the oil companies are receiving approximately $1,000.000 daily less for their gasoline now than they did for the same volume just a year ago. Consistent with the general trend of state gasoline taxes, the increase in the Colorado tax from 2 cents to 3 cents effective May 1, made the average for the 50 cities on that date 2.37 cents compared with 2.71 cents on April 1.

AVERAGE TANK WAGON PRICE IN 50 CITIES

January 1, 1926	16.133
February 1	16.213
March 1	17.267
April 1	18.517
May 1	18.487
June 1	19.607
July 1	19.697
August 1	19.697
September 1	19.587
October 1	19.167
November 1	18.187
December 1	17.607
January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.160
May 1	15.410

GASOLINE PRICES EFFECTIVE MAY 1, 1927

Table showing gasoline tank wagon prices as of May 1, 1927, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since April 1, 1927. High and low prices and state taxes also given.

	Prices Apr. 1	April Changes			Prices May 1	High and Low 1926		High and Low 1925		May 1 1927
Birmingham, Ala.	17.0	16.0	11	....	16.0	20.0	16.0	20.0	13.0	4.0
Phoenix, Ariz.	16.0	....	....	....	16.0	22.0	19.0	20.0	18.0	3.0
Little Rock, Ark.	13.0	....	....	....	13.0	18.0	14.0	19.0	12.0	4.0
San Francisco, Calif.	11.0	....	16	9.0	9.0	16.0	13.0	15.0	13.0	2.0
Denver, Colo.	15.0	....	....	**	14.0	20.0	16.0	20.0	12.0	3.0
Hartford, Conn.	21.0	20.0	5	19.0	19.0	21.0	17.0	21.0	15.0	3.0
Dover, Del.	18.0	17.0	5	16.0	16.0	20.0	17.0	21.0	15.0	3.0
Jacksonville, Fla.	15.0	14.0	11	....	14.0	19.0	13.0	19.0	12.0	4.0
*Atlanta, Ga.	17.0	....	....	....	16.0	21.0	14.0	21.0	14.0	3.5
Boise, Idaho	19.5	....	....	....	19.5	24.0	20.0	21.5	19.0	4.0
Peoria, Ill.	15.2	....	....	....	15.2	19.2	10.5	19.2	10.5	...
Chicago, Ill.	16.0	....	....	....	16.0	18.0	15.0	18.0	13.0	...
Indianapolis, Ind.	15.2	....	....	....	15.2	19.2	16.2	19.2	13.2	3.0
Des Moines, Iowa	13.0	....	....	....	13.0	19.5	16.0	19.5	13.5	2.0
Wichita, Kans.	13.8	....	....	....	13.8	16.8	14.8	18.8	8.8	2.0
Louisville, Ky.	15.0	14.0	15	....	14.0	20.0	17.0	19.0	12.0	5.0
New Orleans, La.	14.5	....	....	....	14.5	17.5	13.5	18.5	11.5	†3.0
Augusta, Me.	20.0	19.0	11	....	19.0	21.0	17.0	22.0	15.0	3.0
Baltimore, Md.	17.0	16.0	6	....	16.0*	19.0	15.0	19.0	13.0	4.0
Springfield, Mass.	21.0	20.0	5	19.0	19.0	21.0	17.0	21.0	15.0	...
Detroit, Mich.	15.8	....	....	....	15.8	19.8	16.8	19.8	13.8	2.0
Duluth, Minn.	16.5	....	....	....	16.5	20.5	15.5	20.5	13.5	2.0
Natchez, Miss.	14.5	....	....	....	14.5	18.5	15.5	18.5	11.5	4.0
Kansas City, Mo.	14.0	....	....	....	14.0	18.9	15.9	18.9	12.9	†3.0
Helena, Mont.	19.5	....	....	....	19.5	24.0	21.0	24.0	18.0	3.0
Omaha, Neb.	14.25	....	....	....	14.25	19.25	14.25	19.25	10.0	2.0
Reno, Nev.	16.0	15.0	16	....	15.0	19.5	16.5	18.5	16.5	4.0
Newark, N. J.	17.0	16.0	6	....	16.0	19.0	15.0	19.0	13.5	...
Albuquerque, N. Mex.	17.0	....	23	16.0	16.0	26.5	20.0	23.5	19.5	6.0
New York, N. Y.	20.0	19.0	11	....	19.0	21.0	17.0	22.0	15.0	...
Charlotte, N. C.	17.0	16.0	6	....	16.0	19.5	15.5	20.0	12.0	4.0
Fargo, N. D.	17.9	....	....	20	17.9	21.0	18.9	20.9	14.9	2.0
Cleveland, Ohio	18.0	....	....	16.0	16.0	20.0	16.0	18.5	15.0	2.0
Tulsa, Okla.	13.0	....	....	....	13.0	17.0	13.0	18.0	9.5	3.0
Portland, Ore.	12.0	11.0	16	....	11.0	16.0	13.0	15.0	13.0	3.0
Philadelphia, Pa.	17.0	16.0	5	15.0	15.0	20.0	17.0	21.0	15.0	‡2.0
Providence, R. I.	21.0	20.0	5	19.0	19.0	21.0	17.0	22.0	15.0	1.0
Charleston, S. C.	17.0	15.0	6	....	15.0	19.5	15.0	20.5	12.5	5.0
Huron, S. D.	16.5	15.0	13	....	15.0	20.5	14.0	20.0	13.0	3.0
Memphis, Tenn.	14.0	....	....	....	14.0	18.5	13.5	18.5	10.5	3.0
Dallas, Tex.	12.0	11.0	5	10.0	10.0	17.0	13.0	18.0	10.0	3.0
Salt Lake City, Utah	17.5	....	15	....	17.5	22.5	18.5	21.5	17.5	3.5
Burlington, Vt.	20.0	19.0	11	....	19.0	21.0	18.0	23.0	15.0	2.0
Norfolk, Va.	17.0	16.0	6	....	16.0	19.0	15.0	20.0	14.5	4.5
Washington, D. C.	17.0	16.0	6	....	16.0	19.0	15.0	19.0	14.0	2.0
Charleston, W. Va.	17.0	16.0	....	....	16.0	19.0	15.0	19.0	14.0	3.5
Milwaukee, Wis.	15.1	....	....	....	15.1	19.1	16.1	19.1	13.1	2.0
Casper, Wyo.	15.0	....	....	....	15.0	20.0	17.0	20.0	15.0	3.0
Seattle, Wash.	12.0	11.0	16	....	11.0	16.0	13.0	15.0	13.0	2.0
Minneapolis, Minn	14.2	....	....	....	14.2	20.2	15.2	20.2	13.2	2.0
Average Price	16.16	....	....	....	15.41	19.717	15.713	19.647	13.629	2.73

Note: Prices at points in the Standard Oil Co. of Indiana, effective January 19, based on 1-cent discount for 50-gallon dumps with following exceptions: Wichita discount prices effective for entire month and Chicago prices entire month based on dumps of 100 gallons. *Does not include ½-cent inspection fee. †State tax 2 cents, remainder city tax. ‡Tax paid by retail dealer.
** 1-cent reduction May 1.

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

DONLEY COUNTY

A. T. Drilling Co.'s No. 1 F. E. Harington, Sec. 39, Blk. 3-C — 1,200 ft. water from 3,115-22 ft.; show gas 3,140-60 ft.; dry granite wash 3,260-93 ft.; shut down to recement 6⅝-in. casing.

GRAY COUNTY

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B — Spudded and shut down.
Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25 — Shut down 865 ft.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B — Total depth 2,666 ft.; gas shut in and work suspended.
British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 3 — 58,000,000 ft. gas and slight spray oil; fishing bit 3,190 ft.
British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 — Rigged and shut down.
Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17, Blk. 1 — Shut down 3,505 ft. for orders.
Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 — Rig.
Edwards et al's No. 1 E. J. Case — Building rig.
Empire G. & F. Co.'s No. 1 W. C. Archer, SW cor. NE Sec. 174, Blk. 3 — Total depth 3,302 ft., spraying 10 bbls. per hour from sandy lime 3,268-3,302 ft.
Empire G. & F. Co.'s No. 1 J. F. Meers, NE cor. SE Sec. 107, Blk 3 — Drilling 2,770 ft., 20,000,000 ft. of gas.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3 — Total depth 2,930 ft.; shut down; 43,000,000 ft. gas; closed in.
Empire G. & F. Co.'s No. 1 Webb, SW cor. Sec. 59, Blk. 25 — Show of oil 2,457 ft.; drilling 3,385 ft.
Foster et al's No. 1 G. Cutebank, SW cor. NE Sec. 65, Blk. 25 — Drilling 2,518 ft.
Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk. 3 — Shut down 2,405 ft. for water.
Gulf Production Co.'s No. 1 J. M. Saunders, Sec. 40, Blk. 2 — Drilling red rock 3,150 ft.
John G. Lane's No. 1 A. Chapman, Sec. 19, Blk. A. C. & H. B. Sur. — Total depth 3,300 ft.; 5 3/16-in. casing parted; now pulling.
Neudigate et al's No. 1 A. Chapman, NE cor. E ½ SE Sec. 52, Blk. 25 — Set 12½-in. 225 ft.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3 — Fishing for 15⅛-in. pipe 420 ft.
Pampa Pet. Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3 — Shut down 3,450 ft.; 1,500 ft. of water from 3,320-60 ft.
Purple Sage Oil Co.'s No. 1 Johnson, Sec. 8, Rockwell County school land — Shut down 2,300 ft. for orders.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B — Show of oil 3,020 ft., pulling liner and 3 joints stuck.
Rensoul Pet. Co.'s (was Salisbury & Reynold's) No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. — Drilling 1,500 ft.
C. B. Shafer's No. 1 G. Cole, SE cor. W ½ SW Sec. 105, Blk. 3 — Drilling 2,820 ft.
The Texas Company's No. 1 J. B. Barrett, NE cor. NW NW Sec. 130, Blk. 3 — Drilling 2,573 ft.
The Texas Company's No. 3 Saunders, C E ½ Sec. 3, B. & B. Sur. — 11,000,000 ft. gas 2,395-2,415 ft.; shot 120 quarts 2,550-80 ft.; cleaning out; 12,000,000 ft. gas at 2,535 ft.; recementing 6⅝-in. casing.
Travis et al's No. 1 J. Back, Sec. 44, Blk. 25 — Well stopped flowing from 2,845 ft.; 1,500 ft. clean oil in hole; to swab.
J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 — Rig blown down.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. — Spudded and shut down.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Blk. 16 — Shut down 3,400 ft.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 — Shut down 2,483 ft.
Eslick et al's No. 1 J. B. Irving, Sec. 13, Blk. 13 — Drilling 2,935 ft.
J. E. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS — Shut down 2,500 ft.; contract depth
J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22 — Drilling 1,220 ft.
J. E. McKanna's No. 1 J. M. Shelton estate, Sec. 29, Blk. 202 — Drilling 3,597 ft.

HEMPHILL COUNTY

A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C — Spudded and shut down.
Hoover et al's No. 1 Schalier estate, Sec. 4 — Spudded and shut down.
Hoover et al's No. 1 fee, J. S. Hood Sur. — Straightreaming 4,400 ft.

HUTCHINSON COUNTY

Anderson & Pritchard's No. 1 Yake, Sec. 1, Blk. J — Total depth 2,005 ft.; plugged back to 2,795 ft.; rig burned while trying to shoot.
Berryman Oil Co.'s No. 1 Sanford, Sec. 83, Blk. 46, H. & T. C. Sur. — Fishing at 2,707 ft.
Conklin et al's No. 1 Johnson, Sec. 1, Blk. XO3, H. & O. B. Sur. — Shut down at 670 ft.
Great Plains Oil Co.'s No. 1 Lee Bivins, Sec. 13, Blk. Y2, T. T. R. R. Sur. — Drilling 1,825 ft.; first gas 1,610 ft., 3,000,000 ft.
Great Plains Oil Co.'s No. 1 Kingland, Sec. 4, Blk. Y — Drilling 410 ft.
Dominion Oil Co.'s No. 1 Jasper, Sec. 23, Blk. M-23 — Shut down 3,137 ft. for storage.
Golden Eagle Oil Corp.'s No. 1 J. Q. Bost, Sec. 6, Blk. Y-2 — Derrick.
Marland Oil Co.'s No. 1 Carver, William Heath Sur. — Drilling 3,460 ft.
Panfield Oil Co.'s No. 1 Luginbyhl Brothers, Sec. 50, Blk. M-23 — Shut down 1,200 ft.
Pole Cat Oil Co.'s No. 1 W. B. Haile, Sec. 24, Blk. M-21 — Rig; spudding.
Phillips Pet. Co.'s No. 1 Yake, Sec. 36, Blk. 46 — Fishing 1,960 ft.
Phillips Pet. Co.'s No. 1 Garland, Sec. 77, Blk. 46, H. & T. C. Sur. — Set 6-in. at 2,650 ft.; shut down 2,961 ft., show of oil.
Prairie Oil & Gas Co.'s No. 1 J. M. Sanford, SW cor. N half Sec. 85, Blk. 46 — Spudding.
Prairie Oil & Gas Co. and Vacuum Oil Co.'s No. 1 Cal Merchant — Drilling 1,790 ft.
Sweeney et al's No. 1 Johnson, Sec. 38, Blk. Y — Drilling 1,780 ft.
U. S. Oil Corp.'s No. 1 Johnson, Sec. 35, Blk. Y — Drilling 790 ft.
Vitek Oil Co.'s No. 1 W. F. Allen, Jose Rodriguez Sur. — Shut down 180 ft.

LIPSCOMB COUNTY

Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 — Bailing 600 ft.
McCorkle's No. 1 A. Barton — Fishing 3,760 ft.
Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW Sec. 100, Blk. 43 — Underreaming to 1,610 for 10-in.

MOORE COUNTY

Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 — Making 34,000,000 ft. gas; underreaming.
Douglas Oil Co.'s No. 1 H. M. Beauchamp, Sec. 112, Blk. 44 — Underreaming at 2,875 ft.
Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1 — One-half baller water per hour at 3,152-3,202 ft.; drilling 3,266 ft.
Morton & Co.'s No. 1 Reeder, Sec. 191, Blk. 3-T — Killed gas; drilling at 2,876 ft.

Phillips Pet. Co.'s No. 2 Special Sneed.....Set 8-in. casing at 2,700 ft.; drilling at 2,761 ft.
Moore County Oil Co.'s No. 1 Sneed, Sec. 30, Blk. 6-T....Drilling by tools 1,970 ft.
Shadler Brothers' No. 1 John Lowery, Sec. 237, Blk. 44...Shut down 1,365 ft.; 12½-in. casing froze.
Skelly Oil Co.'s No. 1 Armstrong & Byrd.....Spudding.
Prairie and Shamrock's No. 1 Gober, Sec. 16, Blk. M-21..Total depth 1,120 ft.; to skid rig to be No. 2; cellar.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43.....Running 5-in. to 3,200 to cut off salt water; total depth 3,830 ft.
Hamilton et al's No. 1 R. B. Wamble, Sec. 144, Blk. 43....Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43.....Shut down 1,600 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43.....Spudded and shut down.
Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43.....Shut down 900 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landergin, SE cor. NE SW Sec. 46, League 310, Capital land.....Running 8-in. 3,300 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell, elev. 4,005 ft.....Drilling 2,200 ft.

POTTER COUNTY

Greater Amarillo Pet. Co.'s No. 1 Townsite, Sec. 167, Blk. 2, A. B. & M. Sur.....Shut down 2,020 ft.; temporarily abandoned.
Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1....Shut down 200 ft.; temporarily abandoned.
Kelmey Oil Co.'s No. 1 W. H. Bush, Sec. 19, Blk. 9.....Rig; temporarily abandoned.

RANDALL COUNTY

Patterson et al's No. 1 Campbell & McIlroy, NE cor. Sec. 60, Blk. K-14, T. T. R. R. Sur.....Spudded and temporarily abandoned.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A.....Drilling 4,930 ft.
Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2.....Cellar; temporarily abandoned.
Gibson Oil Corp.'s No. 1 T. S. Jones.....Salt water 4,143-60 ft.; fishing 4,220 ft.
Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2.....Shut down 650 ft.
Charles Page et al's No. 1 Hamilton, Tract 2, Clay County school land.....Shut down 440 ft.
C. C. Wilson, No. 1 A. H. Tandy, NE cor. Sec. 182, Blk. 42, H. & T. C. Sur.....Location.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk 3-B.....Shut down 1,200 ft.
Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T. T. & N. O. Sur.....Spudded and shut down .
Phillips Pet. Co.'s No. 1 Price & Fuqua, C NE Sec. 33, Blk. 2-B, G. H. & H. Sur.....Rigging.
Whitehead et al's No. 1 Lee Bivins, C SW Sec. 36, Blk. 2, G. H. & H. Sur.....Location.

SWISHER COUNTY

R. H. Miller's No. 1 Todd.....Location temporarily abandoned.

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13.....Shut down 2,029 ft.; 8,000,000 ft.; gas, show of oil 2,027 ft.
Angus et al's No. 1 G. A. Morgan, SW cor. SW NE Sec. 93, Blk. 17.....Show of gas 1,800 ft.
Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24...Fishing for bit 2,400 ft.
Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur.....Spudded and shut down.
Lone Star Gas Co.'s No. 1 C. A. Linkey, C NW SE Sec. 129, Blk. 28.....Making 2,000,000 ft. gas 1,734 ft.; shut down.
Lone Star Gas Co.'s No. 1 R. S. Alexander, NE NW Sec. 11, Blk. 27.....Drilling 1,785 ft.; 10,000,000 ft. of gas.
Marland Oil Co.'s No. 2 W. E. Bentley.....Show gas 2,205 ft.; shut down by agreement.
North Texas Oil Co.'s No. 1 J. H. Jackson, NE NW Sec. 11, Blk. 27.....Drilling 2,215 ft.; 2,000,000 ft. of gas.
J. J. Rook's No. 1 M. Mertel, SE NE Sec. 4, Blk. 24, H. & G. N. Sur.....Drilling 700 ft.
J. J. Rook Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 24.....Fishing casing 1,300 ft.
J. J. Rook's No. 1 C. W. Porter, SW cor. NW Sec. 41, Blk. 24.....Shut down 2,300 ft. by agreement.
Wheeler O. & G. Co.'s No. 1 P. J. Sorenson, Sec. 53, Blk. A-4.....Spudded and shut down.
Smith, Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A.....Shut down 2,000 ft. for orders.
E. L. Woodley, Jr., No. 1 Woodley, Sr., Sec. 13, Blk. 5-A..Recementing 5 3-16 in. at 2,235 ft.
Watchorn O. & G. Co.'s No. 1 F. E. Shelton, C NE NE Sec. 22, Blk. 24.....Fishing for bit 1,695 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 39)

W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O. G. H. & S. A. Sur., elev. 2,105 ft.....Rainbow show 454 and 540 ft; S.D. for 10-in., 1,375 ft.
P. H. Williams' No. 1 L. P. Powell.....Top salt, 1,052 ft; drlg., 2,130 ft.
World Oil Co.'s No. 1 Schneeman, N and W SE cor. Sec. 57, Blk. BB, G. C. & S. F. Sur., elev. 2,679 ft.....Top salt 1,035 ft.; sulphur water 2,490 ft.; T.D. 2,575 ft.; trying to swedge pipe.
Young & Cromwell's No. 1 University, C SE Sec. 23, Blk. 31, University, elev. 3,395 ft.....Pay 1,160-65 ft.; shows at 1,505 and 1,574 ft.; hole full sulphur water 1,930 ft. and 1,962 ft.; S.D., 2,200 ft.

CROSBY COUNTY

El Capitan Oil Co.'s No. 1 O. L. Slaton, NW cor. SW Sec. 5, Blk. B-9, E. L. & R. R. Sur.....S.D., 3,510 ft.; contract depth.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur.....S.D., 400 ft.

DICKENS COUNTY

Bowser Mickels and others' No. 1 Pitchford ranch.....S.D., 3,250 ft.; contract depth; may deepen.
Moutray Oil Co. and Clancy & English's No. 1 Jones, SE cor. NW Sec. 311, Blk. 1, H. & G. N. Sur.....S.D., 3,550 ft.; to deepen.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, B-16, School land, elev. 2,844 ft.....Top salt, 870 ft; drlg., 2,075 ft.
J. S. Cosden et al's No. 3 G. W. Connell-A.....S.D., 600 ft.

FISHER COUNTY

Barber Oil Co.'s (was Mason Oil Co.'s) No. 1 W. A. Cross..Hole full salt water, 2,350-70 ft; drlg., 2,460 ft.
Zoch & McCamey and Marland Oil Co.'s No. 1 Lanius-A, (was Danciger O. & R. Co.'s No. 1 Lanius), NE cor. SE. Sec. 15, Blk. Y, T. & P. Sur.....Drlg., 3,720 ft.
Fred Phillips' No. 1 C. M. Webb, 756 ft. S and 1,050 ft. W NE cor. Sec. 2, Blk. K.....Hole full salt water 2,220-40 ft. and 2,637 ft; drlg., 2,975 ft.
Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur.....Drlg., 2,230 ft.
Marland Oil Co.'s (was Caldwell and others') No. 1 Rochelle, SW cor. NE Sec. 184, Blk. 3, T. & P. Sur...Hole full salt water 3,565-80 ft.; drlg. wet hole, 3,780 ft.
Marland Oil Co. and Texon's No. 1 McCall.....Rig.
Marland Oil Co. and Vacuum Oil Co.'s No. 1 J. H. R. Lagow.....Drlg., 570 ft.
R. W. Raney's No. 2 Maberry.....S.D. for orders, 2,725 ft.
Sinclair Oil & Gas Co.'s (was Bourdon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur.....S.D., 900 ft.
Stearns & Streeter's No. 1 W. A. Howe, N and E SW cor. NE Sec. 12, Blk. 23, T. & P. Sur.....U.R., 3,542 ft.
The Texas Company's No. 1 D. S. Stevens.....New location.

FOARD COUNTY

Fain-McGaha Oil Corp.'s No. 1 Mathews.....New loc.; rig.
Humble O. & R. and Navarro Oil Co.'s No. 1 L. McAdams, C S ½ Sec. 37, Blk. L. S. P. Sur.....S.D. for gas 2,466 ft.

GAINES COUNTY

Westheimer & Daube's No. 1 Birge & Forbes Land Co...New loc., rig on ground.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur.....Small show oil in gray lime 1,884-1,902 ft; S.D., 2,600 ft.
Pandem Oil Co.'s No. 1 Justice, SW cor. NW Sec. 3, Blk. 6, H. & G. N. Sur.....Rig.

GLASSCOCK COUNTY

Green et al's No 1 F. G. Oxsheer.....S.D., 200 ft.
World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Typ. 2-S, T. & P. Sur., elev. 2,553 ft.....Rigged up and S.D.
R. R. Penn et al's No. 1 W. P. Edwards, C SE Sec. 11, Blk. 34, Twp. 2-S, T. & P. Sur.....Drlg., 775 ft.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur.....Spudded and S.D.

HOCKLEY COUNTY

El Capitan Oil Co.'s No. 1 Ellwood, SW cor. Sec. 55, Blk. A, R. M. Thompson Sur., 18 miles NW of Lubbock.....S.D., 1,000 ft.

HOWARD COUNTY

Bowers et al's No. 1 Chester Jones, C SW Sec. 32, Blk. 27, T. & P. (3,200-ft. test).....S. D. for water, 300 ft.
Fred Carey et al's No. 1 G. O. Chalk, SE NW Sec. 124, Blk. 29.....Drlg., 915 ft.
W. W. Donnelly et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2-N, T. & P. Sur.....S.D., 1,519 ft. for water.
Francis & Brunson's No. 1 J. W. Furrh, C SW Sec. 11, Blk. 31, T. & P. Sur., T-1-S.....Location.
F. H. E. Oil Co.'s No. 1 John Roberts.....Drlg., 1,320 ft.
Godley Oil Co.'s No. 1 A. J. Hooks.....Rigging up rotary.
Marland Oil Co. and Zoch's No. 1 Jones.....Drlg., 150 ft.
Marland Oil Co.'s No. 1 J. B. Harding, C SE Sec. 19, Blk. 33, T. & P. Sur.....Corrected pay, 3,173-3,230 ft; swabbed 280 bbls. in 11 hrs.
L. C. Harrison et al's No. 1 Dora Roberts.....T.D., 700 ft; S.D.
Marland Oil Co. & Zoch's No. 1 Guitar Est. No. 1.....Top salt, 1,155 ft; drlg., 1,200 ft.
Midwest Exploration Co.'s No. 1 H. R. Clay.....Small show oil 1,705 ft; drlg., 1,720 ft.

HARDEMAN COUNTY

Murchison Oil Co.'s No. 1 Mayfield.....Rotary; drlg., 1,930 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 31.....S.D., 130 ft.

IRION COUNTY

Cash Dollar et al's No. 1 Abe Mayer, C NE Sec. 1, Blk. 10, S. P. R. R. Sur.....Drlg., 3,170 ft.
Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur.....Drlg., 1,950 ft.

JEFF DAVIS COUNTY

Humble O. & R. Co.'s No. 1 Crecencio Flores, Sec. 34, Blk. 58, T. & P. Sur. T-8.....Rigging up.
J. K. Hughes Dev. Co.'s No. 1 J. Z. Means, 600 ft. from N line and 2,000 ft. from W line of M. Robinson Sur. No. 1.....S.D., 2,986 ft.

JONES COUNTY

Atlantic O. P. Co. and Landreth's No. 3 Howell.....Missed regular pay; S.D. 2,700 ft.
Bateman & Campbell's No. 1 Southard, C. NW NW Sec. 43, Deaf & Dumb Asylum Lands.....S.D.; fish. tools, 1,990 ft.
Midwest Exploration Co.'s (was Campbell et al.'s) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft.....S.D., 1,860 ft.
Consolidated Oil Co.'s No. 1 Armand & Taylor, C S½ SW Sec. 7, Blk. 4, H. & T. C. Sur.....Hole full salt water 1,470-90 ft.; S.D., 2,450 ft.
Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands.....Location.
Gault Brown et al's No. 1 Mrs. A. Zips, NE cor. NW Sec. 34, Blk. 14, T. & P. Sur.....S.D., 1,725 ft.
Gibson & Johnson's No 1 Largent, C SE Sec. 50, Blk. 149, Dewitt Co. School Land.....U.R., 2,600 ft.
Gillette & Hickey's No. 1 M. E. Young, Tevanio Sur. No. 190.....S.D., 1,200 ft.
Grisham & Hunter & Wildman's No. 1 Williams, Harrison Co. School Land, elev. 1,732 ft.....Brown sand 2,620-40 ft.; tested 4 bbls. oil and 7 bbls. water; fish. for 6-in. 2,820 ft.
Hutson & Weaver's No. 1 Smith, Sec. 51, Blk. 18, T. & P. Sur.....S.D. for fuel, 700 ft.
Kirk & Brewer's No. 1 J. H. Milsap, Justo Rodriguez Sur., League 357.....Drlg., 1,970 ft.
Manhattan Oil Co.'s No. 1 S. W. King.....Drlg., 660 ft.
Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur.....Small show oil 2,496 ft; S.D., 2,545 ft.
Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280.....Drlg., 2,345 ft.
Mid-Continent Petroleum Corp.'s No. 1 H. Evans, NE cor. SE SE Sec. 44, S. P. R. R. Sur.....Small show oil 2,831-32 ft; U.R. 6-in. 2,900 ft.
Phillips Pet. Co.'s No. 1 Thornton.....Six bbls. water, 1,930-45 ft; hole full water, 3,055-58 ft; drlg., 3,077 ft.
Shaw & Rathke and others' No. 1 Bristow, SE SE Sec. 1, J. H. Gibson Sur.....S.D., 500 ft.
W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2.....S.D., 825 ft.
Stebbins Oil Co.'s No. J. M. Higgs, Sec. 30, W. T. Scott Sur., elev. 1,624 ft.....Top Sedwick lime 1,265 ft.; swabbed 35 bbls. 1,599-1,604 ft.; deepened to 1,615 ft; no increased; pumped 20 bbls. after head off; making 2 bailers water per hr; plugging back.
Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands.....S.D., 1,655 ft.
Tomberlin et al's No. 1 Oscar Clapp, CSL SW Sec. 37, Blk. 16, T. & P. Sur.....S.D. for water, 805 ft.
World Oil Co.'s No. 1 Boyd (was W. H. Lee), 12,700 ft. N and 2,130 ft. E of SW cor., Samuel Jones Sur. No. 266, elev. 1,729 ft.....T.D., 2,615 ft; U.R. 6-in.
Kingston et al's (was Zeigler) No. 1 Reeves, C SE SE Sec. 164, B. B. B. & C. Sur.....S.D., 2,085 ft.

KENT COUNTY

Douglas Oil Co.'s No. 1 Scoggins.....S.D., 1,540 ft.
Marland Oil Co. and Texon O. & L. Co.'s No. 1 Bilby....Location.

KING COUNTY

Gibson & Johnson's No. 1 Burnett est.....S.D. for water, 1,210 ft.
Midwest No. 1 Patton.....Drlg., 948 ft; red rock.
J. L. Patton No. 1 Patton.....Drlg., 2,065 ft.
Phillips Petroleum No. 1.....Drlg., 2,665 ft.
Sinclair.....S.D., 830 ft; laying water line.
White Eagle No. 1.....Drlg., 1,505 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Jones, CSL Sec. 111, Blk. C, H. & T. C. Sur.....Drlg., 2,630 ft.
Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft.....T.D., 2,690 ft; rig burned.
Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. south and 2,590 ft. west of NE cor. Sec. 31, Blk. 4.....Fish. 12-in., 1,150 ft.
Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T & B. Sur.....C.O., 1,085 ft; hole caving.
The Texas Company's No. 1 Teague.....Location.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. G-25 Pub. Sch. Ld.....Spudding, 150 ft.
Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur.....S.D. for 12-in., 700 ft.

LUBBOCK COUNTY

Sam Arnett and others' No. 1 Bowles Ranch.....S.D., 400 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2.....S.D., 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur.....S.D., 415 ft.
Clark and others' No. 1 Klothman, NW NW Sec. 77, Kulman Sur.....S.D., 580 ft.

MITCHELL COUNTY

California Co.'s No. 1 E. Morrison, Lease 1.....Drlg., 3,015 ft.

B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur. — S.D., 125 ft.
Robert Thraves' No. 1 C. Way — Rig.
Paul Teas' No. 1 Ed Strain — Drlg., 3,120 ft.
Morrison & Thompson's No. 1 Griffith, SE SE Sec. 45, Blk. 29, T. & P. Sur., T-1-N — Small show oil in sandy lime 2,715-20 ft. and 2,750-55 ft; S.D. for orders, 3,200 ft.

B. E. Walter and others' No. 1 J. E. Dollen, NW cor SW Sec. 11, Blk. 27, T. & P. Sur. — S.D., 3,955 ft.; hole full sulphur water.

J. C. Yancey's No. 1 Saunders, 400 ft. N and 1,700 ft. E of SW cor. Sec. 25, Blk. 25, T. & P. Sur. — Spudded and S.D.

MOTLEY COUNTY

Chechaco Oil Co.'s (J. W. Pennington et al of Amarillo) No. 1 J. W. Owens, NW cor. Sec. 26, Blk. 4 (15,000-acre solid block) — Drlg., 2,100 ft.
Explto. Co.'s No. 1 Burleson — New loc., spudded.
Explto. Co.'s No. 1 Tillson — New loc.; spudded.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. — Rig on ground.

NOLAN COUNTY

A. G. Malone et al's No. 1 J. B. Carlyle — Location.
A. G. Malone et al's No. 1 M. C. McElmurry — Spudded and S.D.
J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth — S.D., 960 ft. for water.
Thomas & Reynold's No. 1 Allen, C. W. ½ NW Sec. 58, Blk. X, T. & P. Sur — Drlg., 2,500 ft.
Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigged up and S.D.
Phillips Pet. Co.'s No. 1 Scott, Sec. 58, Blk. 21, T. & P. Sur. — Drlg., 2,640 ft; set 8-in.
Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — S.D., 1,310 ft. for casing.

PECOS COUNTY

Geo. Anderson's No. 1 Sherbino Bros., CWL NW, Sec. 43, Blk. C-4, G. C. & S. F. Sur. — Location.
Allaman & Bell's No. 1 Pecos River Bed, 178 ft. E and 117 ft. S of NE cor. Sec. 60, Blk. 1 — Rigged up.
Arkansas Fuel Co.'s No. 1 H. Holmes ,2,040 ft south and 1,520 ft. east NW cor. Sec. 16, Blk. 178, T. C. R. R. Sur., elev. 2,507 ft. — Top salt 640 ft; bottom salt 1,104 ft; gas show, 1,780-92 ft; show oil, 2,132 ft; sulphur water, 2,380-85 ft; drlg., 2,475 ft.

Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. Sur., elev. 2,556 ft. — T.D., 3,115 ft; flowing sulphur water; fish. for 36 joints 6-in.

Buell and others' No. 1 Batcheler, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft; flowed sulphur water 1,775 ft; repairing engine 2,045 ft.

Buell & Hagan's No. 1 McKenzie, Sec. 8, Blk. 604, Mrs. A. L. Canon Sur., elev. 3,009 ft. — Top salt, 1,170 ft; S.D. for orders, 2,215 ft; 75 ft. fluid in hole.

Buell & Hagan's No. 1 Jasper, 1 mile south and west NE cor. Jasper Co. School Land No. 104 — Location.
California Co.'s No. 1 Union Land Co., C NE NW NW Sec. 10, Blk. 141, T. C. R. R. Sur., elev. 2,615 ft. — Top salt 834 ft.; top dolomite 1,442 ft; 2 bailers sulphur water per hr. 1,550 ft; sulphur water 1,737 ft; flowing sulphur water 1,740 ft; try to mud off water, 1,850 ft.

Cromwell & Kimberlin's No. 1 Blackman., C NW Sec. 24, Blk. 3, H. & T. C. Sur., elev. 2,393 ft. — Top salt, 890 ft; small show oil, 1,930 ft; half bailer oil, 1,948 ft; drlg., lime, 2,055 ft.

M. C. Dibble & Hale's No. 1 Bonebrake — Rigged up and S.D.
Geo. A. Henshaw, Jr., No. 1 I. G. Yates, 330 ft. S and 1,650 ft. E of NW cor. Sec. 544, Blk. 1, I. & G. N. Sur. — Top salt, 525 ft; rainbow show oil, 1,113 ft; drlg., 1,510 ft.

Humble O. & R. Co. and Kirby Oil Co's No. 1 J. T. McElroy, NW SW SE Sec. 124, Blk. 10, H. & G. N. Sur. — Drlg., 735 ft.
Del Rio Drilling Synd.'s No. 1 K. C. & Ft. Stockton, C SW, Sec. 19, Blk. 178, T. C. Sur. — S.D., 740 ft.
Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur. — Location.
Kershaw & Livingston's No. 1 Cannon, SW cor. NE Sec. 54, Blk. A-2, T. C. R. R. Sur. — Location.
Mid-Kansas O. & G. Co.'s No. 1 Smith Taylor, elev. 2,645 ft. — S.R., 642 ft.
Mid-Kansas O. & G. Co.'s No. 4 Yates A, elev. 2,552 ft. — 2,109 bbls; 1,135-1,229 ft.
Mid-Kansas O. & G. Co.'s No. 1 Yates C (was No. 1 Acct. 3), elev. 2,327 ft. — Fished out tools, 858 ft.
Olean Pet. Co.'s No. 1 Arthur Harral, C SE, Sec. 98, Blk. A-2, T. C. R. R. Sur. — Location.
Olean Pet. Co.'s No. 1 G. A. Harral, C SW, Sec. 82, Blk. B-3, G. C. & S. F. Sur. — Location.
Olean Pet. Co.'s No. 1 Sherbino Bros., C NW, Sec. 31, Blk. C-4, G. C. & S. F. Sur. — Location.
Pecos Big 3 Oil Co.'s No. 1 Robertson — Location.
Pecos Big 3 Oil Co.'s No. 1 I. G. Yates — Location.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Scr. Ft. Stockton — S.D., 3,440 ft.
Quinby Oil Co.'s No. 2 Bennett, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. — 200 ft. oil in hole from 1,216 ft; shot 20 qts. 1,208-20 ft; hole full sulphur water, 1,452 ft; S. D. 1,457 ft.

Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. north and 1,320 ft. east SW cor. Sec. 593, Abst. 3,009 — Straightening hole, 575 ft.
Red Bank Oil Co.'s No. 1 Arthur Harral, C SE, Sec. 35, Blk. C-4, G. C. & S. F. Sur. — Location.
Seventy-Five Oil Co.'s No. 1 F. A. Perry, C SE NW, Sec. 19, Blk. 178, T. E. R. R. Sur. — Drlg., 250 ft.
W. R. Shankel et al's No. 1 I. G. Yates, CSL SW SE SE, Sec. 58, Blk. 1, I. & G. N. Sur. — Drlg., 220 ft.
Texon O. & L. Co.'s No. 2 I. G. Yates — Rainbow show, 1,075 ft; S.D., 1,225 ft.
Texon O. & L. Co.'s No. 3 I. G. Yates — Location.
Texon O. & L. Co. and Marland Oil Co.'s No. 1 Blakesley — Top salt, 840 ft; drlg., 1,070 ft.
John Dropplemann's No. 1 Mrs. L. Hershenson, Sec. 7, Blk. 51, T. & P. Sur. T-10 — Drlg., 1,450 ft.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, T. & St. L., elev. 3,425 ft. — Location.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle est. — (Reported abandoned in January) now U.R. 6-in.; T.D., 2,550 ft.

REAGAN COUNTY

The Texas Company's No. 2 J. D. Sugg, C Sec. 87, Blk. 2, T. & P. Sur.; elev., 2,560 ft. — Top salt 860 ft; top lime 2,110 ft; hole full sulphur water 2,130-50 ft; 1,000 ft. sulphur water 2,830-35 ft; T.D., 3,204 ft; will plug.

Tidal Oil Co.'s No. 1 University, NW cor. NE Sec. 20, Blk. 8 — Top salt, 1,302 ft; drlg., 1,500 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell, C SW Sec. 22, Blk. 58, T. & P. Sur., Twp. 8 — Drlg., 3,535 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Pub. Sch. Ld. — Spudded 20 ft. and S.D.
Humble O. & R. Co.'s No. 1-B Kloh, C NE Sec. 47, Blk. 56, T. & P. Sur. T-2-S, elev. 2,781 ft. — 900 ft. sulphur water 1,760-1,800 ft; drlg., 2,130 ft.

World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur., elev. 3,068 ft. — S.D., 1,610 ft; tools moved to No. 1 Duff.
World Oil Co.'s No. 1 Duff — Rigging up; C.O. old hole.

RUNNELS COUNTY

Associated Pet. Co.'s (was Bell & Moore's No. 1 W. W. King, 1,200 ft. W of NE cor. Lge. 14, J. V. Cobrera Sur. — Spudded and S.D.
Moore & Bell's No. 1 Ferguson, 2,640 ft. S and 1,320 ft. E of NW cor. F. J. Ford Sur. No. 152 — Spudded and S.D.
Noble Oil Co.'s No. 1 Simms — Spudded and S.D.
Lou Ladd et al's (was Frank Yates') No. 1 R. M. McMillan — Small show oil and gas 545-62 ft. and 590 ft; S.D. for casing shoe 1,435 ft; hole full salt water.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. — Spudded and S.D.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 26, Blk. M, G. H. & S. A. Sur. — Spudded and S.D.; drlg. water well.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson, NE NW SW, Sec. 101, Blk. 97, H. & T. C. Sur. — Tested 8 bbls. 1,745 ft; another pay at 3,402-07 ft; bailed 70 bbls. oil in 4 hrs. and bailed dry; drlg., 4,300 ft.

STERLING COUNTY

J. P. Williams' No. 1 Clark, NE NE SW Sec. 7, Blk. S, G. C. & S. F. Sur. — S.D., 1,020 ft. for casing.
L. Little's No. 1 Fisher Bros. — Rigging up machine.
Orr et al's No. 1 Neal Reed, CNL, Sec. 15, Blk. 30, W. & N. W. Sur. — New location.

STONEWALL COUNTY

R. F. Garland & Co.'s (was McCamey & Zoch's) No. 1 J. Ward, C SW Sec. 153, Mrs. Ward Dobbs Sur., 3 miles NW of Aspermont — Drlg., 1,340 ft.

TAYLOR COUNTY

Brown Prod. Co.'s No. 1 Henslee — Spudded and S.D.
Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 23, Blk. 19, T. & P. Sur.; elev. 1,904 ft. — S.D., 455 ft.
Gibson & Johnson's No. 1 Hendry — Drlg., 1,800 ft.
Grisham & Hunter's No. 1 D. D. Huddleston, CWL Lot 29, League 146, Grimes Co. Sch. Ld. — Small show oil 2,332 ft; T.D., 2,585 ft; 6-in. froze; run. 5-in.

W. E. Halbert et al's No. 1 Hunt, C SE Sec. 124, Blk. 64, H. & T. C. Sur. — S.D., 1,610 ft.
Humble O. & R. Co.'s No. 1 Mattie Jacobs — Drlg., 2,200 ft.
Midwest Explto. Co.'s No. 1 Dora Smith, Jose Gabo. Sur. — Drlg., 2,650 ft.
Midwest Explto. Co.'s No. 1 Toombes, Alex Thompson Sur. No. 37 — Drlg., 1,850 ft.
Morrison & Thompson's No. 1 Mrs. Alice Rose, SW cor. NE Sec. 29, Blk. 19, T. & P. Sur.; elev. 1,925 ft. — Fish. for 6-in., 2,510 ft.
Owen & Sloan's No. 1 Lattimer — S.D., 725 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W half NW Sec. 64, Blk. 5, T. & P. Sur. — S.D. for fuel, 710 ft.
Sanger O. & R. Co.'s No. 1 Ike Brown NE cor. Sec. 54, Blind Asylum Land — S.D., 1,900 ft. tools in hole.
Sanger O. & R. Co.'s No. 1 Gillespie, Sec. 7, Lunatic Asylum Land — Drlg., 4,300 ft.
World Oil Co.'s No. 1 J. R. Griffith SW cor. NE Sec. 32, Blind Asylum Land; elev. 1,747 ft. — Drlg., 1,400 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. — S.D., 1,235 ft.

TOM GREEN COUNTY

Fitzgerald et al's No. 1 Bennett — Rig.
Marland Oil Co.'s No. 1 Llano, 3,500 ft. S and 13,000 ft. W of NE cor. Llano Co. Sch. Ld. No. 964 — Drlg., 2,540 ft.

UPTON COUNTY

Beaty et al's No. 1 J. F. Lane — Top salt 880 ft; sulphur water 2,370 ft; show oil 2,250-65 ft; drlg., 2,800 ft.

W. W. Donnelly et al's No. 1 University, C SW Sec. 21, Blk. 4, University — Top salt, 1,560 ft; S.D., 3,165 ft.
Hults et al's No. 1 Giddings, C Sub. Sec. 12, Throckmorton Co, Sch. Ld. — Top salt 1,515 ft; S.D., 3,165 ft. for pipe.

Marland Oil Co.'s No. 3 Burleson, T. C. Jones Sur. No. 100 — First pay 2,205 ft; sec. pay 2,395 ft; 2,000 ft. sulphur water 2,390-95 ft; 1,000 ft. sulphur water, 4,135 ft; fish., 4,386 ft. in sandy lime.

Marland Oil Co.'s No. 34 Burleson, Sec. 100, T. C. Jones Sur. — S.D., 3,255 ft.
Sartain & Davis' No. 1 Bull, SW NE Sec. 48, Blk. 41, T. & P. Sur. — Rig burned 3,290 ft; rebuilt.
Simms Oil Co.'s No. 1 B. C. Clark, NE cor. SW, Sec. 5, G. C. & S. F. Sur.; elev. 2,473 ft. — Top salt, 470 ft; drlg., 1,410 ft.
The Texas Company's No. 19 King, Sec. 11 — Swabbed 70 bbls. oil and 140 bbls. sulphur water, 2,178 ft; hole full sulphur water, 2,465-75 ft. and 2,530 ft; show gas, 2,635 ft; more sulphur water, 2,654 ft; drlg., 2,900 ft.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore est., Sec. 183, J. Mitchell Sur. — S.D., 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 6, Blk. N, G. H. & S. A. Sur. — Drlg., 2,755 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 82, Blk. A, I. & G. N. Sur. — Fish., 2,930 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur. — S.D., 3,142 ft; rebuilding rig.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. — Hole full salt water, 2,455 ft; U.R., 2,585 ft.

Magnolia Pet. Co.'s No. 1 Whitehead, Sec. 81, Blk. D, G. C. & S. F. Sur. — Spud., 100 ft. and S.D.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. — S.D., 3,900 ft.
O. O. Owens' No. 1 Mills — Drlg., 2,325 ft.
The Texas Company's No. 1 J. M. Perry, NW cor. Sec. 3, G. C. & S. F. Sur. — Rig.

WARD COUNTY

Marland Oil Co.'s No. 1 J. Sealey, C SE Sec. 78, Blk. A, G. M. M. & A. Sur.; elev. 2,820 ft. — Hole full fresh water 970-80 ft; top salt, 1,100 ft; S.R., 3,105 ft.

WINKLER COUNTY

Champlin Drlg. Co.'s No. 1 C. W. Cowden, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld., elev. 2,889 ft. — Drlg., 1,900 ft.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27 — Drlg., 400 ft.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, S and W NE cor. W half NE Sec. 33, Blk. B-5, Pub. Sch. Ld. — Rig.
Independent O. & G. Co.'s No. 1 Hendricks, Sec. 42, Blk. B-5, Pub. Sch. Ld. — Top lime 2,720 ft; first gas 2,797 ft., 3,000,000 ft. at 2,815 ft; started spraying oil 2,824 ft; 700 ft. oil in hole, 2,877-83 ft; drlg., 2,962 ft; lime.

Independent O. & G. Co.'s No. 1 Hendricks-A — Spudding.
Independent O. & G. Co.'s No. 2 Hendricks-A — Moving in rig.
Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Pub. Sch. Ld., elev. 2,921 ft. — Top salt 1,115 ft; hole full water, 1,321 ft; 10-in set, 1,570 ft; set 8-in., 2,680 ft; S.D., 2,772 ft. in lime and anhydrite.

McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. — Hole full salt water, 1,940 ft; drlg., 1,975 ft.
L. D. Ladd, Hill et al's No. 1 Amburgey, C NW Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur., elev. 3,033 ft. — Top salt 1,220 ft; top lime 3,365 ft; T.D., 3,447 ft; rig burned.

R. S. Matthews et al's No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur., elev. 3,120 ft. — Second hole 200 ft; S.D.
Pure Oil Co.'s No. 1 Hendricks, SW cor. Sec. 41, Blk. B-5, Pub. Sch. Ld. — Drlg., 1,530 ft.
Skelly Oil Co.'s No. 1 M. M. Leeman, 1,320 ft. east of SW cor. Sec. 21, Blk. 75, elev. 2,951 ft. — Top salt, 1,167 ft; S.D., 4,016 ft; anhydrite.

Southern Crude Oil Pur. Co.'s No. 2-C (was No. 3) Hendricks, Sec. 33, Blk. B-5 — Top salt, 1,901 ft; drilled out cement, 2,553 ft. and S.D.
Southern Crude Oil Pur. Co.'s No. 3-C Hendricks, SE cor. NE Sec. 33, Blk. B-5 — Top salt, 1,870 ft; drlg., 2,504 ft.
Southern Crude Oil Pur. Co.'s No. 4 Hendricks, SE — Building rig.
Southern Crude Oil Pur. Co.'s No. 1 Hendricks, SE — Location.
Southern Crude Oil Pur. Co.'s No. 1 Hendricks-B, SE cor. NE Sec. 44, Blk. 26 — Drlg., 2,018 ft; no salt.
Texon O. & L. Co.'s No. 1 Central State Bank SW cor. W half SE Sec. 41, Blk. B-5 — Rigging up.
White Eagle O. & R. Co.'s (was Gibson & Johnson's) No. 1 R. A. Lock, 1,320 ft. west of NE cor. Sec. 30, Blk. 74, northwest of discovery well — Drlg., 425 ft.

ANGLO-PERSIAN OIL CO. REPORTED INTERESTED IN IRMA-WAINWRIGHT

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, May 7.—In the Irma-Wainwright Field, east central Alberta, it is unofficially reported that British interests, generally believed to represent the Anglo-Persian Oil Co., are planning to take over extensive acreage with a view to undertaking a comprehensive development campaign. Negotiations have been in progress for some time between the British interests and British Petroleums, Ltd. of Vancouver, British Columbia for the taking over of the British Petroleums holdings, amounting to approximately 30,000 acres. It is understood that if the deal goes through, British Petroleums, Ltd. will retain a small acreage around its No. 3-B producer, LSD 4, Section 29-45-6w4, and No. 4 producer, Section 30-45-6w4. The latter is optioned to Mewasin Oils, Ltd. which has been planning to deepen the British Petroleums No. 4. The deal includes acreage secured by British Petroleums, Ltd. from the Baxter Lake Oil Co. on a royalty basis. Geologists representing the British interests concerned have been looking over the field for some time. British Petroleums, Ltd. was the pioneer company to use the rotary system in the Alberta fields, and the first company to develop an oil sand in the east central Alberta areas. It has drilled five tests, four of which reached the oil sand, the first test having finished a gasser; and a sixth test is partly rigged up. Considerable shipments of heavy crude have been made; though the properties can hardly be said to be on a commercialy productive basis. The Anglo-Persian Oil Co. has extensive concessions in the province of New Brunswick, and has several times sought to enter the Canadian West; but has been prevented from so doing by its inability under the existing leasing conditions to secure exclusive drilling rights over any extensive area.

In the Wainwright Field, National Exploration Co. LSD 1, Section 30-45-6w4, has spudded in with a rotary test. British-Wainwright No. 1, LSD 4, Section 22-45-6w4, is drilling around 1,000 feet. Interior Oils, Section 36-44-7w4, is shut down at 1,925 feet but is expected to resume drilling about the middle of May. Edmondton Wainwright Oils, LSD 4, Section 29-45-6w4, which has been producing at 2,275 feet, is doing some work on the pumping equipment. The production will, it is reported, be shipped to the new Kling-Del refinery at Wainwright.

Ribstone-Blackfoot

In the Ribstone-Blackfoot area, Imperial Oil, Ltd. Ribstone No. 1, Section 5-45-1w4 is in the limestone at 3,489 feet and held up by a fishing job, with the rotary drill pipe stuck in the hole. London Ribstone Petroleums, Ltd. has located a test in Section 20-43-3w4 and will likely spud in the latter part of May.

In the border fields, east of Coutts, Imperial Oil, Ltd. Erickson Coulee No. 1, LSD 13, Section 8-1-12w4, is at 3,570 feet with a bad fishing job. Attempts are now being made to spud around the lost string of tools. Hauling to this well has been difficult, trucks with casing having been struck in the boundry graded road for hours till other trucks could be secured to pull them out.

In the foothills west of Calgary, Imperial-Bow River No. LSD 15, Section 12-25-5w5, is making hole at 5,200 feet with the 6¾-inch casing down to 5,155 feet. Further south, in the Highwood section, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, is making hole for the 10-inch casing at 2,250 feet. In the Rice Creek area, the Imperial-Rice Creek No. 1, LSD 12, Section 4-14-2w5, is pulling casing.

In the Turner Valley Field, Royalite Oil Co. No. 7, LSD 3, Section 13-20-3w5, is drilling in the Dakotas at 2,500 feet. It is unofficially reported that the oil sand which was commercially productive in the New McDougall-Segur No. 1 in this horizon has been met in Royalite No. 7.

In the north end of the Turner Valley, Imperial-Millarville No. 1, SW, Section 26-20-3w5, has derrick up and is waiting for the drilling outfit from the abandoned Imperial-Burdett No. 1 in the Bow Island Field.

Great West Oils No. 1, SE, Section 7-20-2w5, is at 5,475 feet and still working to dislodge the 2,000-foot section of casing in which the socket is wedged. Some 3,300 feet of the 8¼-inch casing, which had been pulled, is again being lowered into the well, and attempts are being made with a combination socket and mandrel to jar off the top joint of casing in which the lost socket is wedged.

McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, has resumed drilling into the Madison lime and at last reports was makin ghole at 4,070 feet.

Illinois-Alberta Oil & Refining Co. held its annual meeting at Calgary recently, when the following directors were re-elected: President and managing director, A. Owen Jennings; vice president, George Crooks; directors, G. O. Jennings, A. Short and C. B. Alberts. The latter represents the United States shareholders. It was announced that in the week preceding the meeting the Illinois-Alberta No. 1, LSD 14, Section 12-20-3w5, had produced 620 bbls. of crude naphtha. It is planned to drill No. 2 close to No. 1. No. 2 is expected to spud in before the end of June. If No. 2 gets the shallower production in the Dakota sand, as did No. 1, it will be finished in that horizon, and No. 3 started. No. 1 producer has a diamond bit and some pipe still froxen in the hole. It is expected that the production, now running close to 95 bbls. a day, will gradually increase. The financial statement estimated the company's assets at $1,338,221.64; these including accounts receivable, $8,922.47; equipment, $59,185.75; derrick, $16,448.39; wells, $1,006,366.08; leases and oil rights, $30,000; real estate, $2,000; development account, $85,327.71; organization and re-organization cost, $129,971.24. Liabilities included bank overdraft, $287.34; accounts payable, $26,106.95; accrued interest on preference shares, $7,875; due A. O. Jennings, $46,801.35; reserves, $35,823; capital stock, $1,221,328, including $150,000 of 7 per cent cumulative preference stock. The potential revenue from the well at current prices is placed around $10,000 a month. Up to March 31, the date of the financial statement, some $19,163.81 had been realized from sales of crude naphtha.

Dalhousie Drilling

Dalhousie Oil Co. No. 5, LSD 16, Section 30-19-2w5, is at 3,950 feet and drilling. Dalhousie Oil Co. No. 6, LSD 10, Section 13-20-3-5, is drilling at 3,080 feet. Dalhousie No. 1, LSD 4, Section 18-20-2w5, is reported drilling at 3,620 feet, after being shut down waiting for a 5¾-inch diamond drill.

Application is being made for a court order for the formal winding up of the Southern Alberta Oil Co., Ltd., the Alberta Southern Oil Co., Ltd. and the Southern Alberta Refineries, Ltd. The Southern Alberta Oil Co. was one of the pioneer companies in the Turner Valley Field, and in 1915 developed the Southern Alberta No. 1 flowing well, which for some years maintained a considerable production. The Alberta Southern Oil Co. is a development subsidiary; and the Southern Alberta Refineries, Ltd., a refining and marketing subsidiary which had a small plant in the field, handling the output of Southern Alberta No. 1, and a marketing system at various points, in southern Alberta. The Southern Alberta Oil Co. and the Southern Refineries, Ltd. had the distinction, till recently, of being the first and only Calgary oil enterprises to pay dividends. In 1921 the three concerns disposed of their assets to the Southern Alberta Oils, Ltd. which agreed to pay off their liabilities and to finance further development. In 1926 the Dalhousie Oil Co. organization, in which the Southern Alberta interests held 49 per cent and the Royalite Oil Co. interests held 51 per cent of the stock, took over the various Southern Alberta enterprises, arrangements being at that time made for the formal winding up of the three earlier companies.

Derrick Up

New McDougal-Segur No. 2, LSD 14, Section 12-20-3w5, has derrick up and is installing the machinery. The test is expected to spud in about May 15. Pearson & Davies of Calgary have charge of the development work. Sentinel Oils., Section 8-20-2w5, has finished straightening a crooked hole and is drilling new hole at 850 feet. Okalta Oils No. 2, the old Indiana-Alberta well, LSD 8, Section 1-20-3w5, has finished repairing the old derrick and is pulling the 8¼-inch casing. The hole will underream to carry down the 10-inch casing to 3,000 feet, after which the 8¼-inch will be carried to 4,000 feet. Okalta No. 1 LSD 1, Section 1-20-3w5, is shut down at 2,700 feet waiting for 12½-inch casing.

Calmont Oils, LSD 2, Section 1-20-3w5, which has been shut down for the winter at 3,060 feet is getting ready to resume. The 10-inch casing will be lowered to 3,000 feet before resuming drilling.

Spooner Oils No. 1, LSD 12, Section 13-20-3w5, is at 2,960 feet after drilling past more than 700 feet of 10-inch casing. Vulcan Oils No. 2, LSD 11, Section 13-20-3w5, is reported to have spudded in. Work is being started on the derrick for Spooner Oils No. 2, Section 24-20-3w5.

Home Oil Co. No. 1, LSD 10, Section 20-19-2w5, is at 4,070 feet and drilling. Stockmen Oils No. 1, LSD 1, 2, Section 27-20-3w5, is drilling close to 4,000 feet, with 8¼-inch casing down to 3,970 feet. A small show of oil was met at this depth before the casing was lowered. British Dominion Oil Corp., LSD 4, Section 5-20-2w5, is drilling around 5,000 feet, with the 8¼-inch casing at 4,850 feet. Regent Oil Co., LSD 16, Section 1-20-3w5, is at 1,700 feet and drilling. McLeod Oil Co. No. 3, same LSD, is drilling at 1,560 feet.

Dutch-America Oils, LSD 14, Section 4-19-2w5, has again resumed its fishing job at 4,327 feet. This is the old Record No. 1 well, and has a string of fishing tools and a bit at the bottom of the hole. If after a month's work the fishing job proves unsuccessful, a new test will be started close to No. 1.

John Creighton has moved to secure an injunction restraining United Oils, Ltd of Calgary from proceeding with an arbitration for surface rights on SE, Section 24-20-3w5 or from drilling on the property. Creighton claims that the reservation of mineral rights in the Dominion lease of the property was ultra vires.

It is reported that the Calgary Power Co. is investigating a project to run a power line from Calgary to serve the Turner Valley Field; or, in the alternative, to put in a steam plant to use natural gas as fuel.

P. F. Patterson, recently appointed receiver for Alberta Petroleum Consolidated, Ltd., is taking steps to demand an accounting of the affairs of the company from the former directors. The receivership was instituted some time ago as the result of efforts of a committee of former shareholders of the company to secure a reorganization. The shareholders' committee is headed by Fred Parker of Calgary.

Moose Mountain

In the Moose Mountain district, Signal Hill Oil Co. No. 2, LSD 9, Section 34-23-5w5, is drilling around 1,100 feet in a very hard sandstone formation.

In the Morley Reserve area, Nat Lea and associated Winnipeg and Texas interests will drill a test this summer on a location 1¾ miles south of the Wabash Oils test. Mr. Lea holds 240 acres comprising SE, Section 13-24-8w5 and two LSDS in Section 18-24-7w5. The lease partly covers a dry waterbed in Sibbald Creek Canyon, and a portable outfit will be used for the test which is expected to get the limestone within 800 feet.

In the Border fields, Ainsworth Oils, Ltd. of Calgary, on the Milk River Dome near Lethbridge is putting down a series of shallow tests to determine the top of the structure. About 350 feet of drilling is necessary at most; and the information secured will be used in making a commercial location.

South of Skiff, Devenish Petroleums, Ltd., LSD 5, Section 27-5-14w4, got a thin oil sand with fair shows of oil around 2,520 feet. The sand was not thick enough to warrant a test. The well is now drilling at 2,606 feet with the 10-inch casing around 2,590 feet; and is thought to be in the top of the Dakotas.

In the Pincher Creek district, southwestern Alberta, Mount Royal Oil Co. No. 1, LSD 4, Section 7-6-1w5, at Mill Creek is reported to have spudded in. The Western Drilling Co. of Shelby is handling the contract.

On the Quarantine Reserve near Coutts, Urban Oils, Ltd., Section 5-1-15w4, has been cleaned out to bottom at 3,427 feet, following the recent shot, without uncovering sand. An oil-bearing sand was penetrated, but did not prove productive enough to make a commercial well. It is reported that in the field east of Coutts the Madison Oil Co. of Calgary will put down a test close to the Rogers-Imperial gasser in Section 29-1-11w4 and close to the old Beaver Oil Co. test, drilled at the time of the Calgary boom.

It is reported that T. B. Romine of Great Falls, Mont., representing the Homestake Exploration Co. and C. B. Chasey, operator in the Kevin-Sunburst Field, are investigating oil prospects in the Pincher Creek district of southwestern Alberta.

In the Montana fields, the S. Hart Green-Lerum No. 1 SW, Section 11-37-2w, southeast of Sweetgrass, which is around 2,200 feet, is underreaming and setting casing preparatory to drilling into the Sunburst sand.

In northern Alberta, the Bituminous Sands Extraction Co. has done some preliminary work in the tar sand area near McMurray, where it is undertaking development by the Absher process. It is expected the commercial plant will be in operation in May or June. A number of shallow wells will be drilled through the sands and steam forced down into the holes through a pipe perforated at the bottom to release the oil which is brought up through an outer pipe.

MAGNOLIA ADVANCED ITS CRUDE PRICES

The Magnolia Petroleum Co., effective May 5, advanced its crude price schedules 10 cents in the States of Oklahoma, Kansas and Texas, where it buys on a gravity basis. This action followed that of April 20, when the company announced a 10-cent reduction. Its prices are now the same as those posted April 7. With its present schedule, the Magnol'a, for all oil below 33 gravity, pays $1.05 per barrel; from 33 to 33.9 gravity, $1.07, with a 2-cent differential for each degree in gravity, mak'ng 52 gravity or above, $1.45. These prices are 15 cents below those posted by the Prairie Oil & Gas Co. and other major crude purchasers.

Along with the changes in the prices on the crude purchased on the gravity basis, Luling crude was raised 5 cents on May 5, making the new price $1, and equalizes the reduction made on April 20 and re-establishes the price set May 7.

EMPIRE'S FORT WORTH OFFICE

The Empire Gas & Fuel Co. has opened a land office in the W. T. Waggoner Building, Fort Worth, Tex., with C. C. Hoffman in charge. The Empire company has had extensive holdings in north and west Texas for years and is understood to be contemplating considerable expansion in this territory.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

ANTIKNOCK VALUE OF MOTOR FUELS

How do the laboratory chemical methods for ascertaining the knocking qualities of gasoline and benzol mixtures compare with actual tests in motors?—E. W. R.

There has been no general acceptance of any one method, either mechanical or chemical, for obtaining a quantitative index of the knocking or antiknock value of motor fuels. It is the opinion of some authorities that the analytical method, which involves chemical treatment, gives comparable data when confined to fuels of the same origin. The results, when the test is made on motor fuels that have been produced from crudes which have different chemical structures, may, in the hands of some chemists, be misleading. The subject is receiving close attention by many experts. The Bureau of Standards is taking a leading part in the study of motor fuels and the following is taken from their statement of work done with engine tests and investigations of chemical methods for measuring antiknock value.

In connection with the Fuel Research which the Bureau of Standards has carried on for a number of years in co-operation with the automobile and petroleum industries, a survey was recently made of current methods of measuring the antidetonating qualities of motor fuels. This included a review of publications from eight laboratories in the country and two in England, together with a description of the Bureau's routine engine test (devised in 1924) and a detonation bomb which is being developed for the Bureau of Aeronautics.

This survey shows the need for some standard methods of measuring the antiknock value of fuels or some means of correlating the data obtained by existing methods which are usually not independent of test conditions.

Nearly all the methods investigated consist of engine tests; or rely on engine tests for their interpretation, and most of them involve a standard of knock intensity. Knock intensity is most commonly estimated by ear or by using a device known as the Midgely bouncing-pin-knock indicator. Optical indicators and other devices are also used.

The antiknock value of a fuel may be expressed in various ways, according to the method of test. When a variable compression engine is used, the compression ratio is varied to obtain the highest useful compression ratio. In other methods of test the compression pressure is altered (by supercharging a low compression engine or throttling a high compression engine) to obtain the maximum permissible mean effective pressure. Advancing the spark until a knock or a specified intensity occurs in a constant compression engine is a method which several investigators employ. The benzol equivalent or the toluene value of a fuel indicates the precentage of benzol or toluene which must be blended with some reference gasoline to give equal intensity of knock under like test conditions. The difficulty with this method of expression lies in the wide variation possible between different reference gasolines.

ACTIVATED CHARCOAL BY CHEMICAL PROCESS

Is activated charcoal made to any extent by chemical processes?—G. T. I.

Activated carbon, or charcoal, is made by processes of chemical purification in France and Germany, where it is used to some extent for the purpose of extracting benzol from coal gas.

There is one process which consists in treating wood charcoal with sulphuric acid at 250 Fahrenheit, then, after the removal of the acid by washing with water, the product is heated to 1,650 Fahrenheit in a vacuum. Another process involves heating the crude material to between 900 Fahrenheit and 1,100 Fahrenheit in the presence of phosphoric acid.

The Urbain process uses a peat, which contains very little ash, as the raw material. The peat is mixed with phosphoric acid in the proportions of 6 to 7 parts by weight of peat to 2 to 3 parts of the acid, according to the quantity of moisture in the peat. This varies between 15 and 25 per cent. The acid acts on the cellulose of the peat with the result that a jelly-like solution is formed. This product is heated to about 930 Fahrenheit to remove water and to produce incipient combustion. The product is heated to about 930 Fahrenheit to remove water and to produce incipient combustion. The mass is then transferred to retorts where it is heated to approximately 1,800 degrees Fahrenheit.

The phosphoric acid, in the form of phosphorus pentoxide, tends to reduce to phosphorous, but this is controlled by admitting air to the retort. At the temperature used, the phosphorous pentoxide volatilizes and passes out of the retort into towers where it is absorbed. This acid is quite pure and is recovered with a loss of 5 per cent. The carbon residue is washed with water, then dried at 930 Fahrenheit, passed through sieves and graded.

Carbon made by this process appears to be adapted for use in the natural gasoline industry; extraction of benzol from coal gas; recovery of solvent material in numerous chemical plants; the preparation of mixtures for gas masks and for decolorizing and purifying liquids.

It may be reactivated, after use, by heating with super-heated steam.

APPARATUS FOR DETERMINING COLOR STABILITY

Is there any apparatus operated by artificial light which gives satisfactory results against direct exposure to sunlight for showing how light will act on the color of lubricating oils, gasoline and other products?—J. W. C.

The Cooper-Hewitt lamp is used for testing the fastness to light of many coloring materials. Textile materials which have been dyed, leather, colored liquids, and pigments, in addition to oils, are subjected to light tests; and artificial light is considered more reliable for this purpose than actual exposure to sunlight.

A machine for testing colored lacquers, now so extensively used for painting automobiles, has been developed by the Ditzler Color Co. and is mentioned by A. F. Denham in Automotive Industries. It will be seen from the description of this apparatus that with slight modifications, including the elimination of the tank of water, it will make a very good apparatus for testing the influence of light upon petroleum products. Bottles containing the oils might be fastened to the wheels by means of suitable clamps. The description by A F. Denham follows:

A testing machine has been developed by the Ditzler company, based on a similar device constructed and used at the General Motors research laboratory. The machine consists mainly of fairly large diameter wheels on which small coated sheet steel samples are mounted. The wheel is rotated at about two revolutions per hour by means of an electric motor through a series of worm reduction gears. The coated samples on the wheel at the bottom of the cycle of rotation dip into a tank of water, emerging from which they are exposed at the top of the cycle to the rays of a Cooper-Hewitt light. Water levels in the tanks and distance of the light source from the wheel are variable in order to enable the simulation of different weathering combinations. It is estimated that with this apparatus conditions are produced which will in 336 hours of continuous running have the same effect on coated samples as two years of average service conditions.

NITROGEN IN PETROLEUM

What is the quantity of nitrogen found in crude oil? Does this appear to any extent in the finished products after refining?—R. M.

The quantity of nitrogen which has been determined in numerous crudes varies considerably. The following percentages have been reported in the oil from the districts indicated: Pennsylvania 0.008, Caucasian 0 05, Rumanian 0.09 and California 2.35. Some of the Ohio oils contain appreciable quantities. One interesting fact has been reported, that is that the deeper wells produce oil richer in nitrogen than do the shallow wells.

Compounds containing nitrogen are found in the lubricating oils, fuel oil and coke. Nitrogen appears in the form of ammonia in the gas and vapor when distilling, usually above 400 Fahrenheit, and is sometimes very pronounced when the charge has nearly reached the coking stage.

CRUDE OIL EMULSIONS

Do you have any information relative to the quantity of crude oil emulsions formed by the production of crude oil in the United States? Also the quantity of pipe line oil recovered from these emulsions? What is the quantity formed in the storage of crude oil and how much commercial oil is recovered from this source?—H. H. G.

There are no accurate statistics showing the quantity of emulsion, commonly called sediment or b.s., that is contained in the oil from the wells and which settles in the storage tanks. In many districts there is no efforts made, beyond ordinary settling, to separate the sediment because the larger part of the crude produced is so clean that no deduction is made by the purchaser on account of sediment.

The Bureau of Mines in Bulletin 250 discusses this subject as follows: Much oil containing emulsified water is resolved on the lease by simple methods of treatment and no record is kept of the quanity of emulsion produced or of the unresolved emulsion that may have been drained from tanks into sumps. Such conditions often hold on small leases where production amounts to only a few barrels daily. The quantity of emulsion formed on each lease of this type is small, but the aggregate amount for thousands of such leases probably exceeds the production in the larger fields where wells are making large quantities of emulsion. This same bulletin contains an estimate, covering the years 1920 and 1921, showing 100,000,000 bbls. of this cut oil produced in the Mid-Continent and Gulf Coast fields, about half of which was successfully treated. During these two years 568,029,000 bbls. of petroleum were produced in these fields; therefore, it appears that nearly 18 per cent of this oil needed to be treated for the removal of emulsion before it could be marketed. If all of this emulsified oil could have been marketed at the average price it would have brought $200,000,000 to the owners.

During the year 1922 over 15,000,000 bbls. of oil were recovered in California by one process. The total production in California that year was 139,671,000, so more than 10 per cent was treated.

DETERMINING DILUTION OF CRANKCASE OIL

Please explain Sligh's method for determining the dilution of crankcase oil.—F. F. M.

The Sligh method for measuring crankcase dilution may be outlined as follows: Measure 100 c.c. of the oil into a 250 distilling flask, the vapor tube of which is bent down so as to fit into an upright condenser, and place a column of steel wool in the neck of the flask. Place a cork in the flask and support on an electric heater or over a burner. Connect condenser, which may be a 26-inch length of copper tubing three-eighths inch outside diameter, a short water-jacketed copper tube, or a conventional laboratory condenser. Place graduate below a capillary funnel to receive the distillate. If a gas burner is used, heat rapidly to the over point and then adjust the heat to maintain a head of about one-half inch on the capillary funnel.

The rapid increase in the head on the capillary at the transition between diluent and oil is taken as the end of the distillation, and the corresponding volume of distillate is taken as the percentage of the diluent in the oil. The color of the distillate and its apparent viscosity, as it goes into the graduate, are corroborative evidence of the end of the test.

If the oil contains much light material the initial rate of distillation may be very great; however, it may be brought under control before reaching the critical point. The appearance of oil is usually preceded by a marked decrease in distilling rate. The dimensions of the capillary funnel are not important, but should require a distilling rate of about 4 c.c. a minute.

Doctor Sligh states that under ordinary conditions of summer driving the dilutions of from 10 to 20 per cent are the rule, while they may be 20 to 50 per cent under winter conditions.

The effect of dilution upon the viscosity of an oil is approximately as follows:

Effect of Dilution on Viscosity

	Vis. at 100°F.	Seconds Saybolt		
New Oil—	300 Sec.	600	1000	4000
10% dil.	168	315	500	1450
20% dil.	115	178	250	510
30% dil.	71	95	125	200
40% dil.	44	54	63	83
50% dil.	...	...	32	45

Dilution, which is an external contaminant, is seen to produce results which will render an oil absolutely unfit for satisfactory service and hence should be avoided so far as possible.

This cracking still, 8 feet inside diameter, 3½ inch sidewalls, 65 feet long, weighing 268,600 pounds, operates at 450 pounds pressure at a temperature of 900 degrees.

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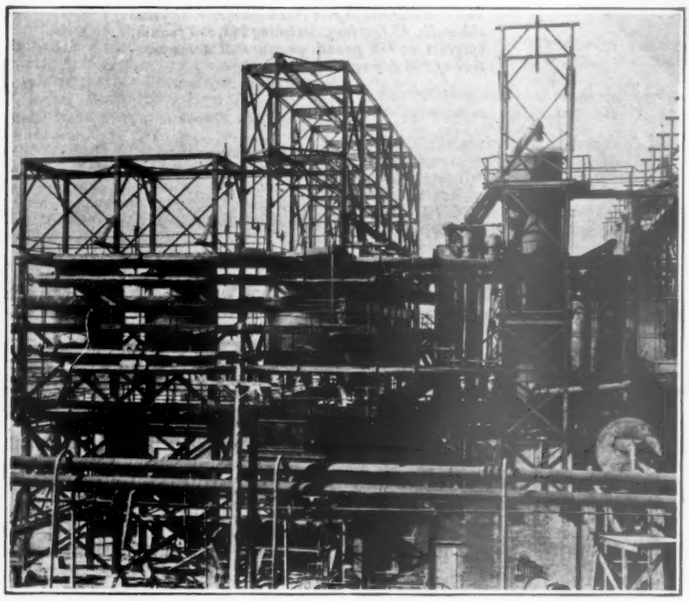
Use Gray Towers in Rerun Operation

Installation to Handle Pressure Distillate at Marland Refinery Gives More Stable Gasoline at Lower Costs

By C. O. Willson

PONCA CITY, Okla., May 7.—Probably every reader is familiar with the general construction and operating features of the so-called Gray process in vapor phase refining. Although the first commercial unit has been operating only about a year and a half, additional installations have been made in different parts of the country, so that practically all operators have given at least some consideration to the possible application of the process to their own operations.

This article is concerned with the application of the Gray process in the refining of pressure distillate secured in the operation of Dubbs cracking units.



General view of a battery used in rerunning pressure distillate at the refinery of the Marland Refining Co. showing eight Gray towers or polymerizers used in vapor phase refining.

The installation is one phase of a large improvement program which has been completed during the past year at the local refinery of the Marland Refining Co.

The new cracking equipment includes six Dubbs cracking units with a rated capacity of 9,000 bbls. daily operating

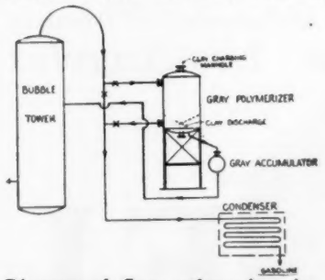


Diagram of Gray polymerizer installation for rerun operation.

with fuel oil and two 2,000-bbl. Cross units using gas oil as charging stock. In addition, the company has a battery of Fleming cracking stills which have been operating for four years with gas oil.

In the operation of the two Cross units the Gray process is used. This installation is larger but in other respects similar to that which has been in operation at the Barnsdall, Okla., refinery of the Barnsdall Refineries, Inc., for the past year and a half. The Barnsdall installation was the first installation made of the Gray process and was described in The Oil and Gas Journal at the time it started operating. In the Cross installation endpoint gasoline is obtained direct from the cracking unit. The Gray process treats the cracked product while still in the vapor phase so that a finished product except for a sweetening treatment is secured direct from the cracking units.

Treating Dubbs Distillate

The installation which has been made at the Marland refinery to take care of the Dubbs pressure distillate, although operating on the same general principles as that with the Cross process, presents some new angles which will be of interest to plant operators who find it necessary to rerun all or part of the overhead product secured in the operation of cracking processes. Although this description is confined to the handling of the Dubbs distillate, it should be stated that the distillate from the Fleming operation can also be rerun with the Gray installations to secure a finished gasoline. The Fleming battery operates with a gas oil charging stock from which a distillate is obtained which is relatively easy to treat regardless of the method used.

To handle the pressure distillate from the Dubbs cracking units, the Marland manufacturing department have made use of a battery which at one time was in crude service. This battery consists of five 800-bbl. shell stills and a pipe still. The construction features and method of operating do not differ materially from similar type equipment in skimming plant operations. The pressure distillate is preheated in a vapor heat exchanger and the pipe still and at a temperature of 350 Fahrenheit empties into a flash drum or vaporizer.

The light vapor ends pass from the drum to a bubble tower. The liquid residuum is picked up from the drum with a hot oil pump and charged to the battery of five shell stills. The operation of the shell stills is continuous, the temperatures being increased at each still so that all the desired ends for finished products are vaporized. A gas oil residuum is taken from the last shell still of the battery. The rerun battery with pressure distillate has a capacity of 9,000 bbls. daily from which about 6,000 bbls. of finished gasoline is obtained.

Gray Installation

Each shell still is connected to a bubble tower, making a total of six for the battery. The installation of the Gray towers as shown in the accompanying photographs and sketch is between the bubble towers and the condensers. The vapors from the bubble towers are first passed to a 12-inch header. From this header vapor lines connect to each of eight Gray towers, or "polymerizers."

The connection between the polymerizers and the bubble towers is made by the header arrangement rather than by direct connections between each tower and polymerizer in order that the pressure may be equalized. This arrangement also simplifies the control in that it makes possible the operation of the entire battery continuously. Only seven of the eight polymerizers are in service at any one time. One unit is cut out of the battery at all times for the purpose of cleaning and recharging with the fuller's earth which serves as the catalyst in the treating operation. The operating cycle of each unit is approximately 20 days so that only one stand-by unit is necessary to assure the continuous operation of the battery.

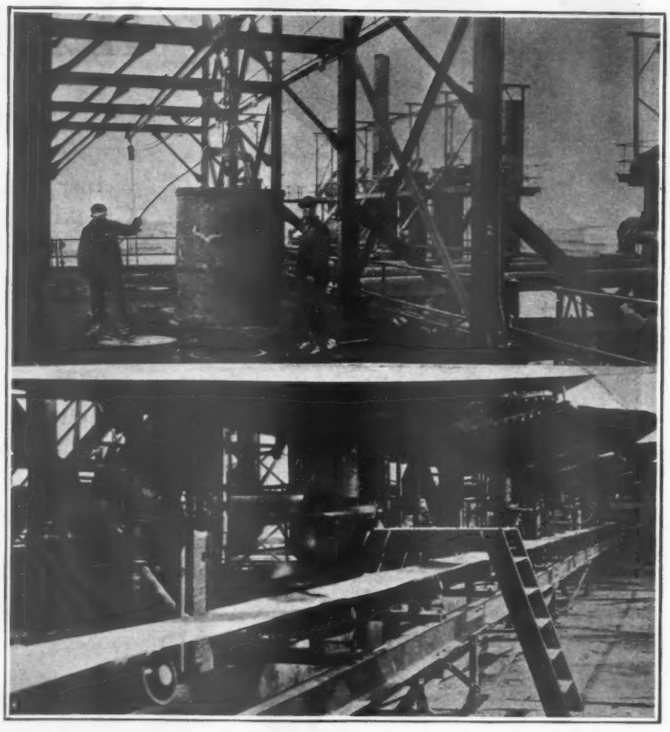
The main features of the Gray units are apparent from the accompanying sketch. Each of the chambers is 10 feet in diameter and 17 feet high with a capacity of 12 tons of fuller's earth. The earth used is 30-60 mesh and is obtained from the mines of the company located near Riverside, Tex. The earth is the same as that used for filtering in the refinery's lubricating plant. The clay can be used interchangeably in the lub and light oil plants and all the clay is revivified with the same burning equipment. This feature simplifies the handling of the earth and is an important feature in the economical operation of the rerunning and lub oil divisions of the plant operations.

Charging and Emptying

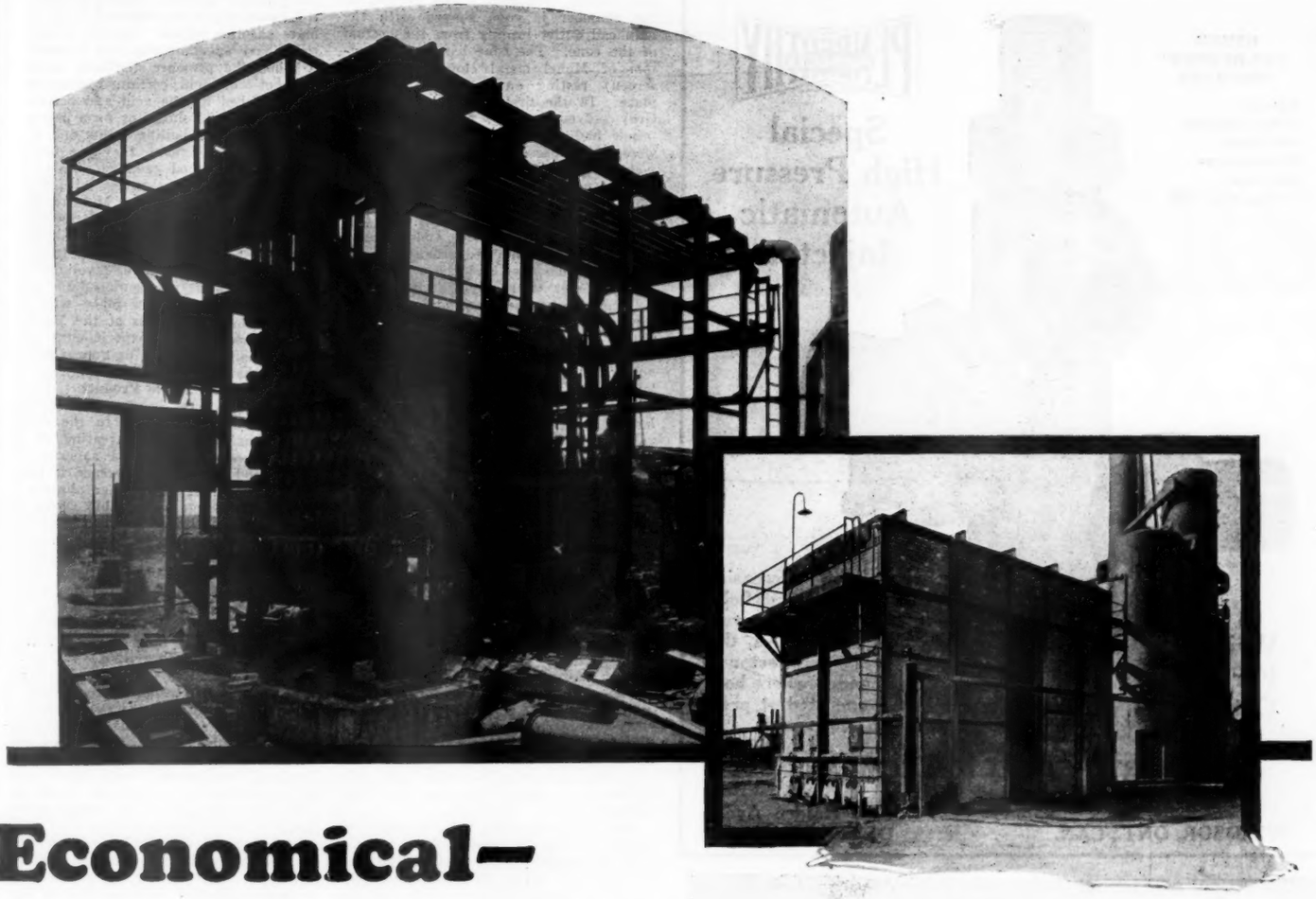
The accompanying photographs illustrate the methods used in charging and emptying the chambers containing the fuller's earth. The earth is brought to the battery by trucks in buckets of approximately 1-ton capacity. These buckets are picked up by a hoist and taken to the top of the polymerizers. There an electrically driven crane delivers the bucket to the polyermizer being charged. The top manhead of the polymerizer is removed and the earth dumped direct into the chamber.

In the clean out operation a small amount of steam is cut into the polymerizer for several hours. This serves to prevent flashing when the lower manhead is removed and also removes a large part of the accumulated oil and naphtha from the clay. When the manhead is removed the clay drops out on the conveyer belt shown in the photograph. This clay accumulates in a hopper and is dumped from the hopper into trucks and taken to the burners. With this method of charging and cleaning, the manual labor is reduced to a minimum. The entire cost of revivifying the earth in the burning operation and the charging and cleaning costs does not exceed $1.50 a ton. The earth is used indefinitely.

The polymerizers are made of five-eight-inch welded and riveted steel and



Charging and emptying Gray polymerizers at Marland plant. Upper view shows bucket containing one ton of fuller's earth charging polymerizer at upper manhead. Lower view shows conveyor belt which conveys spent earth in clean out operation to the hoppers.



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are heavily insulated. The bottom of the chamber is cone shaped with the manhead outlet leading from the bottom of the cone. The cone has a false bottom of Monel metal cloth (250 mesh screen) resting on a perforated steel plate. In the first installations of the Gray polymerizer the chamber or container had a steel jacket. The vapors were then passed through this outer jacket before entering the polymerizer. This was done to prevent excessive condensation in the treating operation.

It has been found, however, that this precaution is not necessary and that better results are obtained when there is no outside chamber and the vapors are passed direct to the polymerizer. The polymerizers at the Marland installation consist simply of a steel container. The vapors enter the chamber on the side near the top. The vapors then pass downward through the fuller's earth, leaving the chamber near the bottom to the condensing system and the receiving house.

The fuller's earth serves as a catalyst, bringing about the polymerization of the objectionable hydrocarbons. These polymers of high boiling points along with some condensation of desired gasoline fractions settle to the bottom of the chamber. The false bottom is permeable to these liquids as well as the vapors. The liquid is collected in an accumulator tank and at the Marland installation this condensate and polymers are returned to the bubble towers. Here the desired fractions are again vaporized and are eventually recovered as a finished product.

Advantages of Process

The foregoing briefly describes the main features of the rerun battery. The Gray towers do not add to the operating difficulties usually experienced in the operation of a rerun battery and no additional labor is required other than that necessary to charge and clean the polymerizers.

The manufacturing department in charge of the Marland refinery operations is authority for the statement that this method has three advantages over the usual method of treating Dubbs distillates. These advantages are:

Slightly increased yields.
More stable product.
Lowered costs.

Usual Methods

There are two methods generally used in treating Dubbs distillate. One is known as the split plumbite method. In this method the distillate is first treated with a 12 gravity plumbite solution without sulphur. It is then acid treated, water washed and sweetened and neutralized with a 12 gravity doctor without sulphur. After rerunning with steam the finished gasoline is finally sweetened with a 12 gravity plumbite with or without sulphur as required.

The second method is known as the simple acid and plumbite method. The pressure distillate is first given a caustic wash to remove the hydrogen sulphide. Then it is acid treated, water washed and sweetened with 12 gravity plumbite without sulphur. The pressure distillate is then rerun in steam stills. Finally, the overhead gasoline cut is sweetened with 12 gravity doctor.

These two methods contrast with the Gray method just described. This method eliminates the greater part of the chemical treatment. It has not been determined definitely whether or not acid treatment can be dispensed with entirely when the Gray towers are used. No acid is required in the treating of the end-point gasoline secured direct from Cross units through the Gray polymerizers. Since the Marland installation was made, pressure distillates coming from several different grade crudes have been treated, including the Panhandle. The difference in the distillates is reflected in the time the earth can be used and also the amount of sweetening required.

Increased Yields

The increased yields of gasoline are due to the differences in chemical action which takes place in the Gray process and the customary methods of treating. It is generally known that acid treating the pressure distillate results in substantial losses which are reflected in the ultimate gasoline yields. Several investigations have substantiated this contention.

When the pressure distillate is given a "shot" of acid certain hydrocarbons are absorbed by the acid and become a part of the acid sludge or form polymers which have high boiling points and when the distillate is rerun they are not recovered as finished gasoline. The total volume or yield loss varies with different distillates but in the Mid-Continent Field cases are cited where the losses total 4 per cent of the pressure distillate.

The Gray process gets away from all or the greater part of the volume loss due to the acid treatment. Some polymerization loss takes place with the Gray process. This loss at the Marland plant, based on some experimental tests, is less than 1 per cent, or approximately half of that when acid is used.

More Stable Product

These differences in chemical reactions are also directly related to the claims made that the catalyst treating of the Gray process results in a superior finished product. This difference is based on the fact that acid either absorbs or polymerizes certain valuable hydrocarbons of the gasoline. Investigations have led to the conclusion that the acid treatment tends to sulfonate the aromatics while the olefins are polymerized. It is well established that these hydrocarbons are valuable gasoline constituents and have a direct relationship to the anti-knock value of the finished motor fuel as well as increasing the yields.

In contrast, with the catalytic method of treating, the aromatic hydrocarbons are not absorbed and the polymerization is confined almost exclusively to the undesirable olefins. It is also claimed that fuller's earth, acting as an absorptive catalyst, removes the undesirable color and gum-forming compounds which detract from the value of the finished motor fuel.

Research work is under way relative to these comparative chemical reactions with the different treating methods and it is probable additional interesting data will be available in the near future. The gasoline obtained in the Marland operation is 27 to 30 color and has found to be stable in storage and when exposed to the sunlight.

The comparative costs have already been indicated in the amount of materials required. These comparisons obviously will vary somewhat with each plant, depending on the previous method of treating and the changes necessary to install the Gray equipment, coupled with the varying costs of fuller's earth. Based on several months' operation cost data, at the Marland plant clearly show the economies of the new treating method.

ENGINEERING STUDENTS ON TOUR OF OIL FIELDS

A party of 16 juniors and seniors from the Colorado School of Mines has been making an inspection trip through the oil fields of Colorado and Texas. The men were guests at the Marland and the Phillips company camps in the Panhandle Field near Borger for several days, and later stopped in Amarillo and at Wichita Falls, visiting the fields and refineries in this district.

The party comprises Profs. Phil Shannon, C. Barb and R. C. Beckstrom; W. Currie, Z. White, R. Wallis, Reese Woolford, J. Davis, J. Easthagen, E. B. Keyt, H. E. Potter, W. Munson, K. Six, L. V. Brown, J. R. Brown, G. Stevens and N. Belioeff.

LARGEST DIESEL TANKER

Work on the largest Diesel electric oil tanker thus far ordered has just been started at the Scott shipyard, Greenock, Scotland, for the Atlantic Refining Co., according to announcement by the Ingersoll-Rand Co. The tanker will be of 12,500 tons dead weight, 469 feet in length, and with a designed speed of 11 knots.

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O&GJ 5-12-Gray

MANY MORE COMPLETIONS IN APRIL BUT LESS NEW WORK WAS STARTED

While there was a noticeable let-down in new field operations in April, there were 202 more wells completed east of California, than in March and an increase of 71,001 bbls. in initial production. A total of 2,284 wells were completed of which 666 were gas wells, and 195 dry holes leaving the number of oil wells 1,423. These wells averaged 265 bbls. in initial production.

At the close of the month 793 rigs up and 4,520 wells classified as drilling, a total of 5,313 operations was a notably low record of field work. There were 171 fewer rigs and 372 fewer drilling wells than at the close of March. Of the wells classified as drilling many were shut down temporarily in the course of the month just past because of the low crude market and an already glutted crude oil market.

On November 1, when the first of the recent series of crude price cuts was made there were:

COMPLETIONS IN ALL FIELDS

	Comp.	Prod	Dry	Gas
Eastern	380	2,930	36	48
Michigan	19	353	3	0
Central Ohio	31	347	9	16
Lima	23	183	4	2
Indiana	28	310	16	1
Illinois	15	327	6	2
Kentucky	86	1,699	20	1
Tennessee	10	780	1	0
Mississippi	2	0	2	0
Kansas	154	13,832	58	8
Oklahoma	458	147,248	144	48
West Texas	105	49,165	23	0
North Cent. Texas	454	42,864	179	11
Texas Panhandle	110	27,080	7	15
East Cent. Texas	8	....	0	0
Gulf Coast	107	58,060	38	1
Southwest Texas	117	1,111	55	20
Arkansas	34	2,171	11	3
North Louisiana	66	3,409	29	16
Wyoming	31	18,978	7	1
Montana	29	4,494	10	2
Colorado	9	2,700	5	0
Utah	1	....	1	0
New Mexico	7	140	2	0
Total, April	2,284	378,181	666	195
Total, March	2,082	307,180	564	180
Difference	202	71,001	102	15

SUMMARY OF NEW WORK

Field—	Rigs	Drg.	Total
Eastern	121	456	577
Michigan	7	46	53
Central Ohio	13	37	50
Lima	2	29	31
Indiana	3	45	48
Illinois	3	29	32
Kentucky	6	157	163
Tennessee	0	28	28
Mississippi	10	15	25
Alabama	0	6	6
Florida	2	11	13
Kansas	56	254	310
Oklahoma	240	1,185	1,425
West Texas	39	302	341
North Central Texas	45	465	510
Texas Panhandle	51	330	381
East Central Texas	0	23	23
Gulf Coast	45	211	256
Southwestern Texas	33	118	151
Arkansas	17	52	69
North Louisiana	41	88	129
Wyoming	29	257	286
Montana	8	125	133
Colorado	10	89	99
Utah	1	38	39
New Mexico	11	124	135
Total, April	793	4,520	5,313
Total, March	964	4,892	5,856
Difference	171	372	543

OKLAHOMA

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Carter	20	2,990	4	..
Garfield	12	577	7	..
Grady	37	3,930	5	8
Hughes	9	415	6	1
Kay	28	4,884	6	7
Muskogee and Wagoner	18	55	10	6
Okfuskee	11	1,154	2	..
Okmulgee	21	85	11	5
Osage	46	4,085	10	7
Pawnee	10	278	1	..
Creek	67	4,793	21	3
Pottawatomie	7	5,494	4	..
Seminole	83	115,596	10	2
Stephens and Cotton	27	1,407	12	2
Tulsa	21	1,004	12	3
Miscellaneous	41	501	25	4
Total April	458	147,248	144	48
Total March	386	146,824	113	44
Difference	72	424	31	4

Summary of Rigs and Wells Drilling

	Rigs	Drlg.	Total
Carter	13	56	69
Creek	32	102	134
Garfield	3	21	24
Grady	7	61	68
Hughes	3	21	24
Kay	7	61	68
Lincoln	2	16	18
Logan	..	11	11
Muskogee and Wagoner	4	30	34
Okfuskee	15	29	44
Okmulgee	12	36	48
Osage	22	67	89
Payne	..	14	14
Pawnee	3	27	30
Pontotoc and Garvin	3	30	33
Pottawatomie	20	52	72
Seminole	75	416	491
Stephens and Cotton	4	38	42
Tulsa	2	11	13
Miscellaneous	13	86	99
Total April	240	1,185	1,425
Total March	263	1,263	1,526
Difference	23	78	101

KANSAS

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Butler	23	1,495	3	..
Chautauqua and Elk	11	235	1	2
Cowley	20	2,247	4	4
Greenwood	36	1,534	15	..
Sumner	13	5,794	2	..
Miami	15	280	10	..
Miscellaneous	37	2,247	18	2
Total April	154	13,832	53	8
Total March	151	11,427	62	6
Difference	3	2,405	4	2

Summary of Rigs and Wells Drilling

	Rigs	Drlg.	Total
Butler	10	50	60
Chautauqua and Elk	1	16	17
Cowley	5	25	30
Greenwood	16	34	50
Marion	5	10	15
Rice	..	10	10
Sumner	4	26	30
Woodson	2	9	11
Miscellaneous	13	74	87
Total April	56	254	310
Total March	76	301	377
Difference	20	47	67

NORTH CENTRAL AND WEST TEXAS

Summary of Completions, April, 1927
West Texas

County—	Comp.	Prod.	Dry	Gas
Borden	1	0	1	0
Crane	29	34,982	3	0
Coke	1	0	1	0
Concho	3	110	2	0
Crockett	1	0	1	0
Glasscock	2	230	1	0
Howard	17	902	1	0
Jones	7	829	3	0
Kimble	1	0	1	0
Mitchell	4	110	2	0
Pecos	5	1,077	3	0
Reagan	6	768	0	0
Reever	1	0	1	0
Taylor	1	0	1	0
Upton	22	7,222	0	0
Val Verde	1	0	1	0
Winkler	3	2,935	1	0
Total April	105	49,165	23	0
Total March	77	15,173	17	2
Difference	28	33,992	6	2

North Central Texas

Archer	70	3,166	35	0
Brown	113	21,723	33	4
Callahan	15	790	9	1
Clay	7	45	4	1
Coleman	6	50	3	2
Comanche	2	0	2	0
Cooke	24	1,027	6	1
Denton	7	79	4	0
Eastland	19	3,268	8	0
Hardeman	1	0	1	0
Haskell	1	0	1	0
Jack	4	100	1	0
Jones	3	387	1	0
Montague	30	784	6	1
Palo Pinto	2	125	0	0
Parker	1	0	1	0
Shackelford	36	532	22	1
Stephens	5	168	2	0
Throckmorton	9	605	4	0
Wichita	37	699	20	0
Wilbarger	30	1,501	6	0
Young	32	7,824	10	0
Total April	454	42,864	179	11
Total March	398	28,751	150	2
Difference	56	14,113	29	9

Summary of Rigs and Wells Drilling
April, 1927
West Texas

County—	Rigs	Drg.	S.D.	Ttls.
Crane	9	30	1	40
Crockett	0	7	4	11
Howard	2	23	10	35
Jones	1	18	10	29
Mitchell	2	12	3	17
Reagan	0	1	30	31
Upton	2	26	5	33
Miscellaneous	23	57	65	145
Total April	39	174	128	341

North Central Texas

Archer	4	22	4	30
Brown	2	37	32	72
Callahan	2	19	8	29
Coleman	3	15	15	33
Cooke	5	20	3	28
Eastland	3	25	6	34
Jack	0	7	3	10
Montague	2	12	7	21
Shackelford	4	23	29	56
Stephens	1	11	5	17
Throckmorton	1	10	4	15
Wichita	6	21	5	32
Wilbarger	2	39	6	47
Young	7	26	8	41
Miscellaneous	2	15	28	45
Total April	45	302	163	510
Grand total North and West Texas, April	84	476	291	851
Grand total North and West Texas, March	119	698	195	1,012
Difference	35	222	96	161

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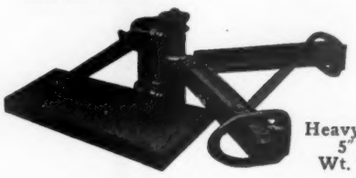

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Manufacturers of McCord Force Feed Lubricators

TEXAS PANHANDLE

Summary of Completions, April, 1927

County—	Comp.	Prod.	Dry	Gas
Carson	27	9,237	1	2
Gray	10	959	0	2
Hansford	1	0	1	0
Hartley	1	0	1	0
Hutchinson	63	14,739	2	3
Moore	2	0	0	2
Roberts	1	0	1	0
Sherman	1	0	1	0
Wheeler	10	2,145	0	6
Total April	110	27,080	7	15
Total March	80	19,072	5	7
Difference	30	8,008	2	8

Summary of Rigs and Wells Drilling April, 1927

County—	Rigs	Drg.	S.D.	Ttls.
Carson	5	59	10	74
Gray	5	33	10	48
Hutchinson	32	122	31	185
Wheeler	5	18	7	30
Miscellaneous	4	13	27	44
Total April	51	245	85	381
Total March	93	318	67	478
Difference	42	73	18	97

EAST CENTRAL TEXAS FIELD

Summary of Field Operations

County—	Comp.	Dry	Gas	Rigs	Drg.	Ttl
Van Zandt	1	1	0	0	0	0
Anderson	0	0	0	0	1	1
Cherokee	0	0	0	0	4	4
Ellis	0	0	0	0	1	1
Franklin	0	0	0	0	1	1
Hopkins	1	1	0	0	1	1
Freestone	0	0	0	0	3	3
Falls	1	1	0	0	0	0
Hunt	1	0	0	0	1	1
Limestone	2	2	0	0	8	8
Navarro	3	3	0	0	3	3
Total April	8	8	0	0	23	23
Total March	1	1	0	0	25	25
Difference	7	7	0	0	2	2

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Mirando	37	365	16	11	14	40	54
Rockdale-Minerva	28	439	8	0	0	7	7
Luling	5	280	0	0	1	4	5
Kingsville	0	...	0	0	0	7	7
Refugio	3	...	0	3	0	4	4
Adams Field	2	...	1	2	0	2	2
Somerset	2	9	0	0	1	1	5
Miscellaneous	39	18	30	4	14	53	67
Total April	117	1,111	55	20	33	118	151
Total March	87	901	36	22	41	161	202
Difference	30	210	19	2	8	43	51

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rig	Drg.	Ttl.
Bossier	8	40	0	0	0	1	1
Caddo	23	1,399	6	3	16	31	47
Claiborne	1	0	1	0	1	2	3
DeSoto	1	0	1	0	1	4	5
Grant	2	0	2	0	1	3	4
LaSalle	4	1,200	2	0	2	4	6
Monroe Dist.	4	*	0	4	7	5	12
Natchitoches	4	0	4	0	0	2	2
Red River	3	170	1	0	0	3	3
Richland	3	0	1	3	2	7	9
Sabine	3	525	1	0	3	8	11
Webster	4	75	1	2	2	3	5
Winn	2	0	2	0	3	4	7
Miscellaneous	4	0	4	0	1	4	5
Total April	66	3,409	29	16	41	88	129
Total March	72	2,879	39	12	49	103	152
Difference	6	530	10	4	8	15	23

*17,936,000 feet of gas.

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dry	Ttl.
Union	21	1,559	7	3	14	31	45
Ouachita	8	332	1	0	2	10	12
Columbia	0	0	0	0	1	3	4
Nevada	3	80	1	0	0	2	2
Miscellaneous	2	0	2	0	0	5	5
Total April	34	2,171	11	3	17	52	69
Total March	47	1,309	15	6	20	62	82
Difference	13	862	4	3	3	10	13

GULF COAST

Summary of Field Operations

	Comp.	Prod.	Dry or S.w.	Gas	Rigs	Drg.	Ttl.
Boling	2	610	0	0	3	11	14
Batson	6	40	2	0	2	5	7
Blue Ridge	5	1,975	1	0	0	10	10
Big Creek	2	6,900	0	0	0	6	6
Barber Hill	1	1,200	0	0	1	3	4
Dayton	0	0	0	0	0	1	1
Damon Mound	0	0	0	0	0	0	0
Edgerly (La.)	1	100	0	0	0	4	4
Goose Creek	5	250	3	0	1	8	9
Humble	2	25	0	0	1	5	6
Hull	8	7,985	0	0	2	9	11
High Island	4	400	3	0	0	2	2
Jennings (La.)	1	0	1	0	0	4	4
Lockport (La.)	6	7,250	0	0	2	8	10
Markham	1	125	0	0	0	4	4
Nash	1	350	0	0	1	4	5
Orange	8	2,620	1	0	1	5	6
Orchard	0	0	0	0	0	1	1
Pierce Jct.	8	6,425	1	0	4	10	14
Piedras Pintas	0	0	0	0	0	1	1
Spindletop	13	19,135	5	0	9	27	36
Saratoga	2	5	1	0	0	3	3
Sour Lake	4	375	1	0	0	2	2
South Liberty-South Dayton	5	710	3	0	0	4	4
Stark (La.)	0	0	0	0	0	2	2
Vinton (La.)	6	1,500	2	0	1	4	5
West Columbia	1	0	1	0	1	0	1
Miscellaneous	15	80	13	0	16	68	84
Total April	107	58,060	38	0	45	211	256
Ttl. March	100	47,014	41	1	58	233	291
Difference	7	11,046	3	1	13	22	35

WYOMING

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy	1	75	0	0	0	3	3
Salt Creek	19	18,648	1	0	10	71	81
Lance Creek	0	0	0	0	0	1	1
Big Horn Basin	1	0	1	0	4	50	54
Lost Soldier and Carbon Cty.	0	0	0	0	2	17	19
Rock River District	0	0	0	0	0	8	8
Fremont Cty.	3	0	3	0	1	22	23
Osage	0	0	0	0	2	3	5
Natrona Cty.	0	0	0	0	0	5	5
Lincoln and Uintah Cos.	5	250	1	1	8	46	54
Baxter Basin	0	0	0	0	0	7	7
Miscellaneous	2	5	1	0	2	24	26
Ttl. April	31	18,978	7	1	29	257	286
Ttl. March	45	25,066	8	0	32	259	291
Difference	14	7,088	1	1	7	2	5

MONTANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Kevin Sunburst	29	4,494	9	2	5	54	59
Cat Creek and Miscellaneous	1	0	1	0	3	71	74
Ttl. April	29	4,494	10	2	8	125	133
Ttl. March	12	848	4	0	11	127	138
Difference	17	3,646	6	2	3	2	5

COLORADO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total April	9	2,700	5	0	10	89	99
Total March	9	712	2	0	7	92	99
Difference	0	1,988	3	0	3	3	0

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total April	1	0	1	0	1	38	39
Total March	0	0	0	0	3	38	41
Difference	1	0	1	0	2	0	2

NEW MEXICO

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total April	7	140	2	0	11	124	135
Total March	3	375	4	0	11	130	141
Difference	4	235	2	0	0	6	6

EASTERN FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Allegany	50	94	0	0
Bradford	154	297	1	2
Middle Field	0	4	4	
Venango Clarion	24	25	2	3
Butler Armstrong	11	17	4	1
Southwest Pennsylvania	20	300	9	10
West Virginia	58	639	8	23
Southeast Ohio	60	1,555	12	9
Total April	380	2,930	36	48
Total March	351	2,330	34	56
Total	29	600	2	8

Summary of Work Under Way

Field—	Rigs	Drg.	Ttl.
Allegany	19	50	69
Bradford	20	144	164
Middle Field	4		4
Venango-Clarion	1	18	19
Butler-Armstrong	6	12	18
Southwest Pennsylvania	4	40	44
West Virginia	42	103	145
Southeast Ohio	29	85	114
Total April 30	121	456	577
Total March 31	123	409	532
Difference	2	47	45

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Knox	1	0	1	0	2	2	4
Ashland	5	0	1	4	6	0	6
Medina	1	0	0	1	0	5	5
Lorain	1	0	1	0	0	1	1
Wayne	0	0	0	0	1	3	4
Holmes	9	347	0	3	4	10	14
Athens	4	0	0	4	0	6	6
Coshocton	2	0	2	0	0	3	3
Cuyahoga	8	0	4	4	0	5	5
Jackson	0	0	0	0	0	1	1
Summitt	0	0	0	0	0	1	1
Total April	31	347	9	16	13	37	50
Total March	33	415	9	16	12	47	59
Difference	2	68	0	0	1	10	9

ILLINOIS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	6	0	6	0	0	5	5
Crawford	2	2	1	0	0	3	3
Lawrence	1	100	0	0	0	3	3
Wabash	7	225	2	0	3	8	11
Clinton	0	0	0	0	0	1	1
Morgan	4	0	2	2	0	1	1
Madison	1	0	1	0	0	2	2
Marshall	0	0	0	0	0	1	1
Macon	0	0	0	0	0	1	1
Shelby	6	0	0	0	0	1	1
Coles	0	0	0	0	0	1	1
St. Clair	0	0	0	0	0	1	1
Tazewell	0	0	0	0	0	1	1
Total April	15	327	6	2	3	29	32
Total March	13	226	2	0	2	29	31
Difference	2	101	4	2	1	0	1

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	3	24	0	0	1	4	5
Hancock	3	10	1	0	0	3	3

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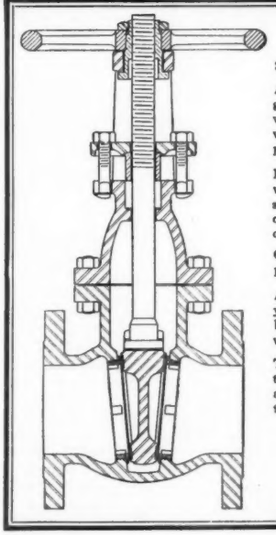

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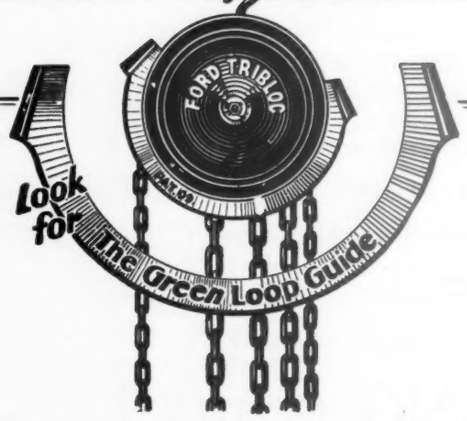

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Sandusky	2	11	0	0	0	2	3
Mercer	2	7	0	0	0	2	2
Van Wert	0	0	0	0	0	1	1
Seneca	0	0	0	0	0	2	2
Lucas	0	0	0	0	0	3	3
Ottawa	2	10	0	1	0	1	1
Shelby	3	47	0	0	0	2	2
Hardin	2	55	0	0	0	1	1
Logan	1	0	0	1	0	0	0
Darke	1	9	0	0	0	3	3
Pauiding	0	0	0	0	0	1	1
Total April...	23	183	4	2	2	29	31
Total March..	21	162	2	1	7	34	41
Difference ...	2	21	2	1	5	5	10

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Blackford	0	0	0	0	0	1	1
Jay	1	0	1	0	0	3	3
Adams	2	25	0	0	0	4	4
Randolph	1	2	0	0	0	0	0
Gibson	3	150	2	0	0	6	6
Pike	9	71	4	0	0	4	4
Daviess	8	62	6	0	0	7	7
Sullivan	0	0	0	0	1	3	4
Vigo	1	0	1	0	0	3	3
Allen	1	0	0	1	2	0	2
Knex	0	0	0	0	0	1	1
Dubois	0	0	0	0	0	1	1
Benton	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Martin	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Spencer	1	0	1	0	0	1	1
Warrick	0	0	0	0	0	1	1
Perry	0	0	0	0	0	1	1
Bartholomew	1	0	1	0	0	1	1
Miami	0	0	0	0	0	1	1
White	0	0	0	0	0	1	1
Total April..	28	310	16	1	2	45	48
Total March.	18	355	6	3	4	57	61
Difference ..	10	45	10	2	1	12	13

MICHIGAN

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl
Saginaw	19	353	3	7	41	48
Alcona	0	0	0	0	1	1
Shiawassee	0	0	0	0	1	1
Iosco	0	0	0	0	1	1
Crawford	0	0	0	0	1	1
Wayne	0	0	0	0	1	1
Total April	19	353	3	7	46	53
Total March	24	860	1	17	28	45
Difference	5	507	2	10	18	8

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	7	78	1	0	0	18	18
Allen	3	2	1	0	0	11	11
Barren	25	180	8	0	0	30	30
Ohio	16	1,313	2	0	0	26	26
Daviess	2	0	2	0	0	6	6
Hancock	0	0	0	0	1	0	1
Cumberland-Monroe	3	2	2	0	0	12	12
Clinton	0	0	0	0	1	2	4
Simpson	0	0	0	0	0	1	1
Butler	0	0	0	0	0	3	3
Adair	0	0	0	0	1	0	1
Grayson	0	0	0	0	0	2	2
Wayne	5	11	2	0	0	4	4
Lee-Owsley	2	20	0	0	3	5	8
Wolfe	2	5	1	0	0	1	1
Morgan	1	2	0	0	0	0	0
Estill	14	35	0	0	0	5	5
Powell	0	0	0	0	0	1	1
Lawrence-Johnson	0	0	0	0	0	1	1
Johnson-Magoffin	5	50	1	0	0	12	12
Floyd	1	0	0	1	0	4	4
Knox	0	0	0	0	0	5	5
Elliott	0	0	0	0	0	1	1
Menifee	0	0	0	0	0	1	1
Carter	0	0	0	0	0	2	2
Laurel	0	0	0	0	0	1	1
McCrary	0	0	0	0	0	2	2
Kentucky	86	1,699	20	1	6	157	163
Tennessee	10	780	1	0	0	28	28
Mississippi	2	0	2	0	10	15	25
Alabama	0	0	0	0	0	6	6
Florida	0	0	0	0	2	11	13
Ttl. April..	98	2,479	23	1	18	217	235
Ttl. March	84	2,581	13	2	26	216	242
Difference .	14	102	10	1	8	1	7

REMOVING PARAFFIN FROM FLOWING WELLS

(Continued from Page 123)

of having a separate tool for each size.

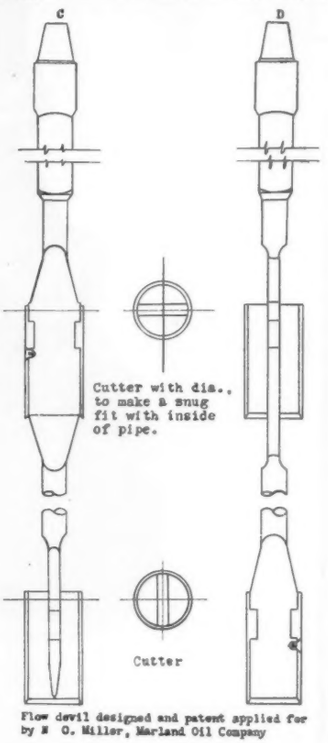
The main disadvantage of this tool is that it cannot be used in wells while they are flowing, as the cross-sectional area of the pipe is completely closed by the tool when it is being pulled from the well. This necessitates running the tool between flows, and in gas-lift wells it is usually necessary to shut down the well while it is being cleaned.

Paraffin Knife

The paraffin knife has a cylindrical cutter or blade attached to a stem which is provided with a tool joint so that the tool may be used with a sinker bar or short stem to force it through the paraffin. The cylindrical cutter is split along one side so that it may contract or expand with irregularities in the diameter of the pipe. The sharp bottom edge cuts the paraffin loose from the pipe as the tool is run into the well. Drawings of the tool are shown at E and F on the chart.

The paraffin knife may be used while the well is flowing as the oil can flow through the tool. This, in fact, is desirable as the oil carries the paraffin from the well as it is shaved from the pipe and prevents the loosened paraffin from accumulating in and plugging the well. In using the tool it is, therefore, unnecessary to wait until the well stops flowing or to shut down gas-lift wells.

One unsatisfactory feature of the knife is that it does not remove the paraffin from the well, but only cuts it free from the pipe so that it may be flushed from the well by the oil. This tool is, therefore, of little use in removing large deposits, or when the pipe is completely plugged. It is advisable in that case to use the paraffin hook for removing the large deposits of paraffin, and then use the paraffin knife often enough so that the paraffin is soft and easily flushed from the well.



Flow devil designed and patent applied for by N. O. Miller, Marland Oil Company

Flow Devil

The flow devil is a tool similar to the paraffin knife, and was designed by N. O. Miller of the Marland Oil Co. Drawings of the tool are shown at C and D on the chart. Instead of one set of cutters this tool has two cutters, the upper cutter is unnecessary for removing the paraffin but is important as a guide to keep the tool from canting and hanging to the pipe. The cutters are not split to allow for irregularities in the pipe, but are made with a diameter slightly smaller than the inside of the pipe to be cleaned. The split cutter used in the paraffin knife is probably better, as it allows the tool to conform with any irregularities in the pipe.

The flow devil is used in the same manner as the paraffin knife and has the same advantages and disadvantages.

Special Equipment

In order to facilitate the use of these tools and prevent loss of time and oil, each well should be so equipped that the crew can run the tool in the shortest possible time and without unnecessary delay for rigging up.

In order to prevent a loss in production of oil in flowing wells, each well should be equipped with a special head so that the tools may be run into the well while it is flowing. The special heads for wells flowing through casing

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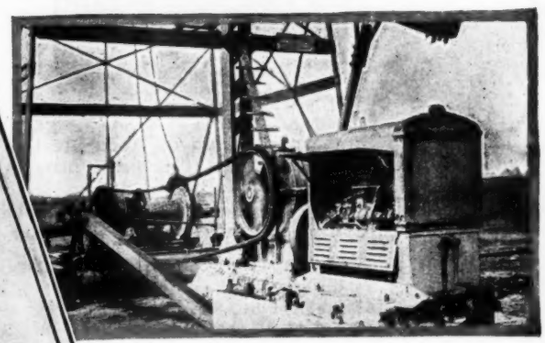

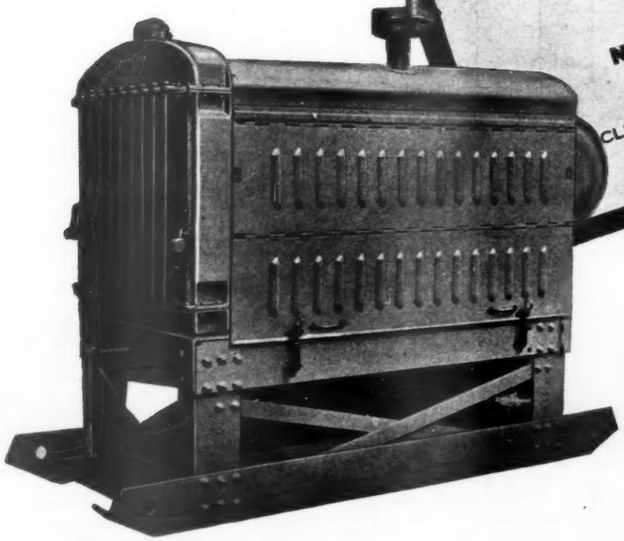

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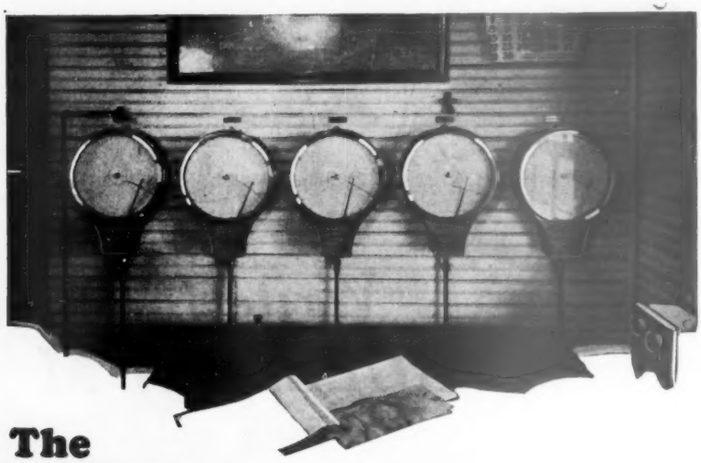

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comprises a length of pipe which is placed above the control head; this pipe is of the same size as the casing to be cleaned, and is long enough so that the tools may be run and the oil saver attached. The control head can then be opened and the tools lowered into the well without interfering with the flow of the well. After the paraffin is removed the tools can be drawn into the pipe above the control head, the control head closed, the oil saver removed and the tools withdrawn. A special head for wells flowing through casing is shown at A, and one for wells flowing through tubing is shown at B in the chart. The special head for wells flowing through tubing or gas-lift wells is similar to that used for wells flowing through casing. The gate valve at the bottom of the special head is larger than the tubing so that the tools may readily pass through the valve, and it takes the place of a control head.

This special head is primarily for use in wells where the paraffin knife or flow devil is used at regular intervals, and eliminates the loss of oil or the shutting down of gas-lift wells. The time and oil saved by this additional equipment will more than justify its use on flowing wells.

Portable Winches

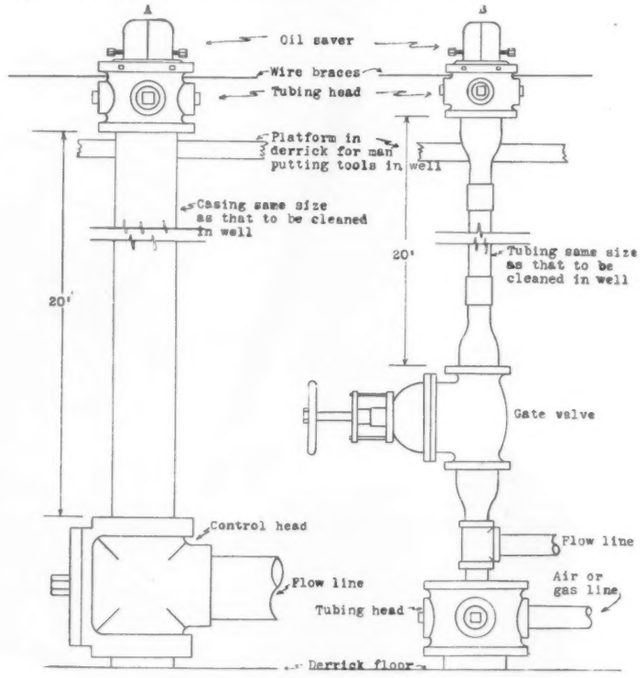
The use of portable winches for operating these tools eliminates the necessity of having each well equipped with power, and increases the number of wells that can be cleaned by one crew in a day. In the Salt Creek Field of Wyoming where electric power is available at each well, portable electric winches are used. These winches are made in two sizes for different types of work. The large size is mounted on a 5-ton motor truck with a 4-wheel drive, and consists of a 50-horsepower, variable-speed motor and controller with a gear-driven winch having a capacity of 3,000 feet of three-quarter-inch wire line. The smaller size is mounted on a 2½-ton truck and has a 25-horsepower, variable-speed motor and controller with a gear-driven winch having a capacity for 2,000 feet of three-quarter-inch wire line. These portable winches can be used for pulling tubing in addition to running the paraffin tools.

The paraffin can be removed from the average well in one hour by using the portable winch and the tools previously described. A crew of two men is enough for this work, one man operating the winch and acting as foreman, and the other at the well watching the tools. The approximate cost of cleaning wells in this manner is as follows: Labor, winch operator, $5; helper, $4; depreciation, interest on investment, maintenance, etc., $25; power, $3; miscellaneous, $3; this makes a total of $40 per day or a cost of $8 per well assuming five wells can be cleaned per day.

In fields where electric power is not available or practical, tractor winches or those mounted on trucks and geared to the truck engine may be used. The cost of operating these winches may be somewhat higher than the electric ones, however, the cost per well should not be very much higher.

Summary

In using these tools for removing paraffin the wells should first be cleaned by use of the paraffin hook to insure the removal from the well of all accumulated paraffin. After the wells are conditioned with this tool, the paraffin knife or "flow devil" should be used at regular intervals. The intervals between cleaning should be short enough so that the paraffin deposited will still be soft and will not have formed in large enough quantities to affect the production or operation of the well. If the wells are not cleaned often enough, the paraffin may accumulate in such quantities as to affect the production and in addition it may plug the well after being loosened by the paraffin knife. If the well is cleaned too often, the cost of preventing paraffin troubles will be unnecessarily high. This must, of course, be determined for each well by experiment and observation.



Special equipment to prevent loss of oil while cleaning wells with paraffin knife.

PHINEAS L. GOLDEN DEAD

Phineas L. Golden, 82 years old and a resident of the Pennsylvania oil region for 60 years, died at his home in Bradford, Pa., Wednesday, April 27. Mr. Golden was among the earliest oil operators in the Duke Center district in the Bradford Field. He was a successful oil producer.

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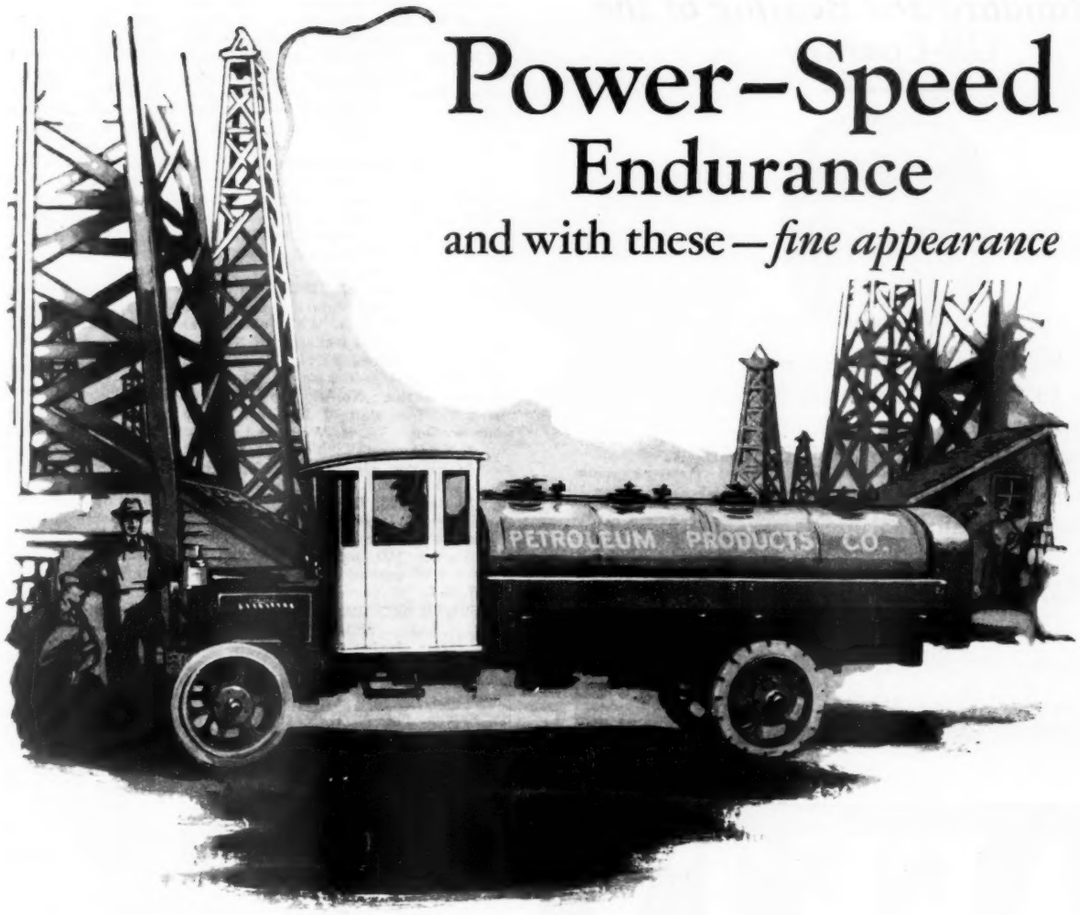

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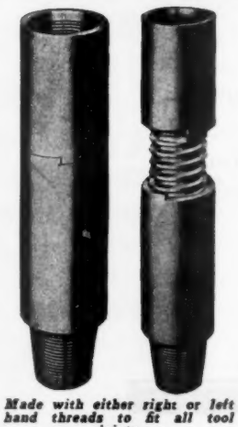

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Marland Oil Co.'s No. 3 C. R. Garner and others, 990 feet south and 250 feet west of NE cor. of Section 93, Block 4, I. & G. N. Survey; No. 4, 1,650 feet south and 330 feet west of NE cor. of the same survey. Corrected location: Roxana Petroleum Corp.'s No. 4 C. R. Garner and others, 330 feet north and 990 feet east of SW cor. SE Section 106, Block 4, I. & G. N. Survey.

Hutchinson County

Cockrell-McIlroy Oil Co.'s No. 2 E. Cockrell, 330 feet north and 230 feet east of SW cor. of Section 1, Block 3-B, D. & S. E. Survey. Goldelline Oil Co.'s No. 4 J. A. Whittenburg-A, 990 feet south and 330 feet east of NW cor. of Section 27, Block 47, H. & T. C. Survey. Phillips Petroleum Co. and Coble Oil Co.'s No. 29 J. A. Whittenburg, 990 feet south and 1,665 feet west of NE cor. of Section 13, Block Y; No. 30, 990 feet south and 2,330 feet west of NE cor. of the same section; No. 31, 330 feet south and 2,330 feet west of NE cor. of the same section. W. S. Wells and others' No. 1 E. Cockrell, 330 feet north and west of SE cor. of southwest 40 acres of north 160 acres of east 320 acres of Section 3, Block 23, B. S. & F. Survey.

Wheeler County

Shamrock Petroleum Corp.'s No. 1 Sam Parker, 100 feet north and 800 feet east of SW cor. of Section 109, Block 23, H. & G. N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Continental Oil Co. and Perkins & Cullum's No. 2 L. F. Wilson, 540 feet north and 150 feet east of SW cor. SW SE Section 114, A. T. N. C. L. Survey. Harry Graham and others' No. 1 Dr. A. B. Edwards, 150 feet north and east of SW cor. NE Section 26, Lula Platt Hunt Subdivision. Navarro Oil Co.'s No. 2 L. F. Wilson, 3,460 feet south and 150 feet east of NW cor. Section 112, A. T. N. C. L. Survey. George L. Pace and Nelson Holding Co.'s No. 5 J. B. Miller-B, 50 feet north and 200 feet west of SE cor. of Lot 6, Section 19, A. N. T. C. L. Survey. Royal Petroleum Co.'s No. 4 L. F. Wilson, 460 feet south and 150 feet east of NW cor. Section 1, S. P. R. R. Survey, A-412, and located in D. L. & C. Survey, A-1,093. Successful Oil Co.'s No. 1 G. W. Moss, 150 feet north and west of SE cor. of north 40 acres of G. W. Moss' 200-acre tract out of Section 1, H. T. & B. Survey, A-199. United Producers Co.'s No. 1 W. L. Andrews, 1,320 feet south and 450 feet east of NW cor. of the W half of SW W. L. Andrews' 640-acre tract out of Thomas Glass Survey, A-141. W. C. Young and others' No. 4 C. B. Abney, 150 feet north and 450 feet west of SE cor. of Lot 16, C. B. Abney Subdivision of Section 1, S. P. R. R. Survey, A-428. Continental Oil Co.'s No. 11 Abercrombie & Taylor, 450 feet south and 150 feet west of NE cor. of their 70-acre lease out of SW Section 2, same survey, A-1,281. Kell & Kruger's No. 6 R. O. Prideaux, 450 feet north and west of SE cor. of north 113 acres of J. I. Hand Survey, A-181. Shappell Oil Co.'s No. 12 R. O. Prideaux, 150 feet south and west of NW cor. of J. Dorsey Survey, A-122, and located in J. I. Hand Survey, A-181. L. Wilson & Russell's No. 9 H. O. Prideaux, 450 feet south and 880 feet east of NW cor. of H. O. Prideaux's 345-acre tract out of A. Rohus Survey, A-1,126.

Brewster County

McPhail & Kempster's No. 1 McIntyre, 500 feet north and west of SE cor. of W. T. Mitchell Survey, No. 31, Block 352.

Brown County

Adamson & Bearman's No. 1 S. T. Miller, 150 feet south and east of NW cor. of east 80 acres of E. Brooks Survey, A-597. Forest Oil Co.'e No. 3 M. L. Smith, 150 feet north and 2,180 feet east of SW cor. of M. L. Smith's 320-acre tract out of S. A. & M. G. Survey, No. 1, A-849. J. K. Hughes' No. 9 J. W. Shore, 150 feet south and 1,050 feet east of NW cor. J. C. Ryan Survey, No. 635; No. 10, 150 feet south and 1,350 feet east of NW cor. of the same survey. Hurley Oil Co.'s No. 1 T. A. Sorrells, 750 feet north and 150 feet east of SW cor. of west 40 acres of south 200 acres of east 30 acres of Section 43, T. & N. O. Survey. McKenna and others' No. 8 J. W. Shore, 70 feet south and 150 feet east of NW cor. of their 70-acre lease out of C. S. Betts Survey, No. 625; No. 9, 615 feet south and 450 feet west of NE cor .of the same 70-acre lease; No. 10, 885 feet south and 150 feet west of NE cor. of the same 70-acre lease; No. 11, 1,185 feet south and 150 feet west of NE cor. of their same 70-acre lease. E. H. Ramsey's No 3 E. O. Henson, 780 feet south and 150 feet west of NE cor. of their lease out of E. D. Henson's 90-acre tract out of Greenberry Logan Survey, No. 147. Skelly Oil Co.'s No. 1 H. J. Ellis, 150 feet south and east of NW cor. of H. J. Ellis, 130-acre tract out of S. A. & M. G. Survey, No. 3, A-850. O. H. Shoup, Jr.'s, No. 4 J. Byler, 1,415 feet south and 910 feet east of SW cor. of T. & N. O. Survey, No. 43. Southern Drilling Co.'s No. 1 A. H. Morris, 1,550 feet north and east of SW cor of S. W. Richardson Survey, No. 2, A-1,574. The Texas Company's No. 44 Mrs. R. M. Lowe, 410 feet north and 600 feet east of SW cor. of George Stubblefield Survey, No. 622; No. 45, 410 feet north and 900 feet east of SW cor. of the same survey. Alford Oil Co.'s No. 1 J. A. Forbes, 10 feet SW of NE line and 1,320 feet NW of SE line of J. J. Riddle Survey, No. 143, A-797. Baker and others' No. 1 D. E. Smith, 750 feet NW of SE line and 150 feet SW of NE line of D. E. Smith Survey, No. 4, A-2,004. Russell and others' No. 2 T. W. Oden, 750 feet NW of SE line and 750 feet NE of SW line of T. W. Oden's 460-acre tract out of Peter Hudson Survey, No. 37, A-403.

Callahan County

J. C. Cooke's No. 1 McCoy & Hill, 790 feet north and 4,535 feet west of SE cor. of J. P. Collins Survey. Milham Corp.'s No. 1 W. H. Dowkins, 600 feet north and west of SE cor. of SE NW Section 7, Block 5, S. P. R. R. Survey. F. Payne and others' No. 1 J. C. Dermitt, 150 feet south and west of NE cor. of SW NE of W. Helm Survey, No. 184. Porter Development Co.'s No. 1 George Biggerstaff, 660 feet south and west of NE cor. SE NW Section 18, Deaf & Dumb Asylum Land. Shaw and others' No. 4 J. A. Miller, 2,015 feet north and 150 feet east of SW cor. of Section 98, Comal County School Land.

Clay County

Eastern Petroleum Co.'s No. 1 H. B. Bowen and others, 2,070 feet south and 1,375 feet west of NE cor. of Section 2,641, T. E. & L. Survey. Empire Holding Corp.'s No. 4 John Barry, Jr., 1,570 feet north and 2,035 feet west of SE cor. of Section 2,642, T. E & L. Survey, being 465 feet south and 150 feet west of NE cor. of Lot 14; No. 5, 1,570 feet north and 2,335 feet west of SE cor. of Section 2,642, T. E. & L. Survey, being 465 feet west of NE cor. of Lot 14.

Coleman County

Davis and others' No. 1 Willie D. Padgett, 4,350 feet south and 150 feet east of NW cor. of W. D. Padgett's 265-acre tract out of Block 83, Fort Bend County School Land Survey, No. 224.

Cooke County

Sun Oil Co.'s No. 1 J. Hooker, 150 feet north and west of SE cor. of south 77 acres of west 17 acres of Section 13, Thomas School Survey, A-900.

Fisher County

Marland Oil Co. and Vacuum Oil Co.'s No. 1 H. R. Lagow, C SE Section 3, Block 22, T. & P. Survey.

Crane County

Ed Landreth's No. 1 State Land, 40 feet south and 795 feet east of NW cor.

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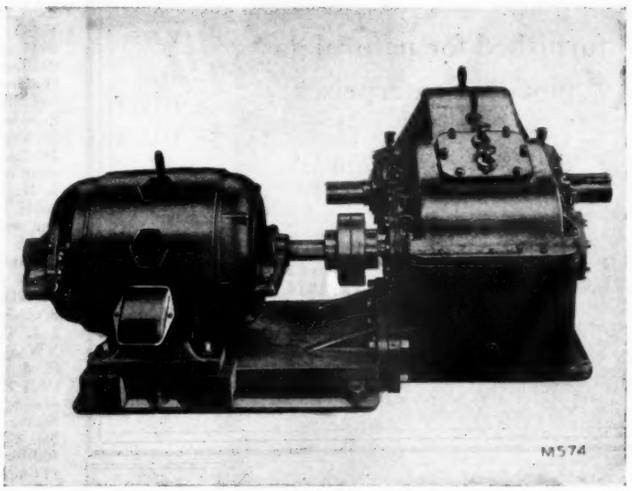

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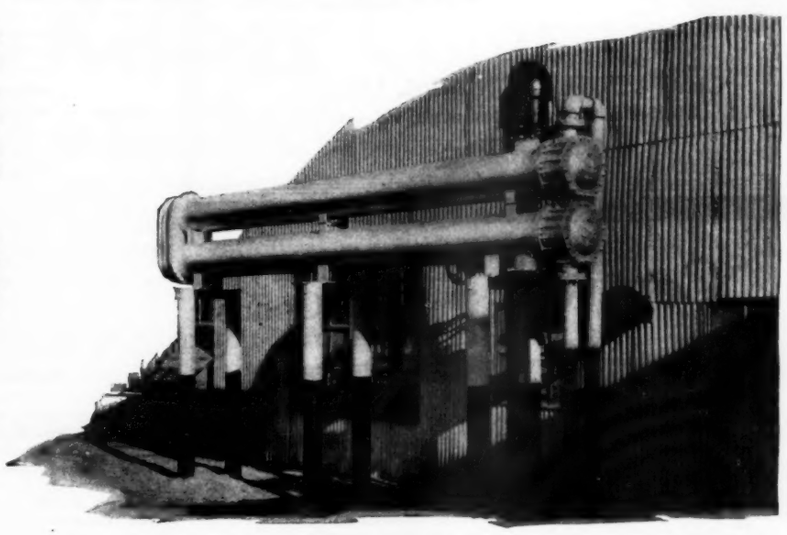

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Columbus	St. Louis	Tulsa
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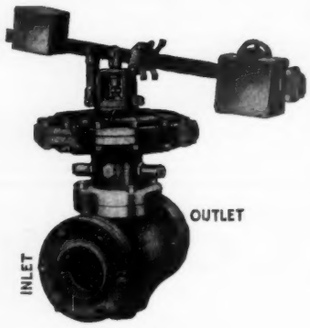

When measuring gas with orifice meters, the Fulton Differential Gas Relief Valve, automatically turns them on and off, in conformity with the changes of flow. Gas companies which have not yet studied its operation are invited to write for descriptive catalogue, today.

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Large gas companies, after using "Central" Pipe, have commented upon its uniform lengths, perfect roundness, and careful beveling. These sterling qualities in "Central" reduce construction costs by speeding up the field work and, in addition, insure a tight durable line.
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DISTRIBUTORS: Taubman Supply Corporation, Tulsa, Oklahoma, and branches; Dunigan Tool & Supply Co., Breckenridge, Texas, and branches; Putnam Supply Company, Putnam, Texas, and branches; Louisiana Iron & Supply Co., Shreveport, La., and branches; Petroleum Equipment Co., Los Angeles, California, and branches; American Supply Co., Mexia, Texas; Standard Supply Co., Inc., Wichita Falls, Texas.

of Section 200, Block F, C. C. S. D. & R. G. N. G. Survey and located in C. P. company's lease, being 360 feet north and 195 feet west of C. P. company's No. 11, J. T. McElroy.

Eastland County

Chestnut & Smith, Inc.'s, No. 1 Maude Simmons, 330 feet south and east of NW cor. of Lot 27, McLennon County School Land, No. 2. R. W. Harlip and others' No. 1 W. E. Reynolds and others, 150 feet north and west of SE cor. of NW Section 20, Block 1, H. & T. C. Survey. Hoffman & Page's No. 1 C. T. Webb, 200 feet north and east of SW cor. NW Section 26, Block 2, H. & T. C. Survey. L. Teatsworth and others' No. 3 J. L. Johnson, 150 feet north and 800 feet west of SE cor. NW Section 11, Block 4, H. & T. C. Survey. Cranfill & Reynolds' No. 2 J. E. Spencer, 330 feet south and west of NE cor. SW NE Section 15, Block 3, same survey. McLester Oil Co. and others' No. 2 T. Thorp, 900 feet north and 260 feet east of SW cor. of P. Thorp's 65-acre tract out of J. R. Stubblefield Survey. Pete Hoffman's No. 1 J. T. Poe, 330 feet south and east of NW cor. SE NE Section 15, Block 3, H. & T. C. Survey. Prairie Oil & Gas Co.'s No. 1 J. T. Poe, 330 feet north and east of SW cor. NE NE, same section. States Oil Corp. and Vacuum Oil Co's No. 1 T. H. Hale, 1,000 feet south and 400 feet east of NW cor. of T. H. Hale's 114-acre tract out of the W half of Section 19, Block 3, H. & T. C. Survey. Texas Pacific Coal & Oil Co.'s No. 1 Cochran, 200 feet north and west of SE Co. NW Section 15, Block 3, H. & T. C. Survey. Thomas & Reynolds' No. 1 J. E. Chesley, 400 feet north and 350 feet east of SW cor. NW Section 384, S. P. R. R. Survey. West Adams Petroleum Corps.' No. 4 L. A. Ramsower, 150 feet south and 200 feet east of NW cor. of Section 38, Block 4, H. & T. C. Survey.

Jack County

Prairie Oil & Gas Co.'s No. 1 A. B. Kurkendall, 330 feet south and east of NW cor. of William Scott Survey, A-599.

Jones County

Manhattan Oil Co.'s No. 1 S. W. King, 7,700 feet south and 1,400 feet east of NW cor. of J. Hartlett Survey, No. 198-A-21.

Knox County

The Texas Company's No. 1 C. B. Teague, 360 feet south and 995 feet east of NW cor. of Section 203, Block 45, H. & T. C. Survey.

Lampasas County

Roeser & Pendleton's No. 1 W. H. Bunch, 1,320 feet north and 650 feet west of SE cor. of W. C. Martin Survey.

Mitchell County

The California Co.'s No. 3 C. M. Adams Lease 3, 1,650 feet south and 2,310 feet west of NE cor. of Section 11, Block 28, Township 1n, T. & P. Survey; No. 1 J. J. Handley, 330 feet south and east of NW cor. of Section 13, Block 28, Township 1n, same survey; No. 19 E. Morrison, Lease 2, 2,310 feet north and 990 feet west of SE cor. of Section 28, Block 28, Township 1n, same survey.

Montague County

Arco Oil Co.'s No. 1 J. W. Maddox-A, 150 feet north and 4,100 feet east of SW cor. of J. Chambliss Survey, A-123, being 150 feet north and east of SW cor. of their 30-acre lease. Olean Petroleum Co.'s No. 1 R. A. Smith, 200 feet south and east of NW cor. of Section 96, Kaufman County School Land, A-407. L. Seigler and others' No. 2 J. W. Maddox, 150 feet north and east of SW cor. of north 20 acres of Lot 14, S. H. Arnold Survey, A-5. The Texas Company's No. 12 J. W. Maddox-D, 215 feet north and 1,420 feet east of SW cor. of their lease "O" and located in Lot 11, S. W. Arnold Survey, A-5. Woods, Benton, Lesh & McCall's No. 1 R. W. Cunningham and others' 150 feet south and 600 feet east of NW cor. of J. P. Newton Survey, A-573, being 150 feet south and east of NW cor. of their 60-acre lease.

Palo Pinto County

Strawn Petroleum Co.'s No. 24 J. N. Stuart, 4,440 feet north and 650 feet west of SE cor. of Section 70, Block 4, T. & P. Survey.

Pecos County

Pecos Big Three Oil Co.'s No. 1 M. Holmes, 620 feet north of the middle of the south line of Section 542, Brooks and Burleson Survey, A-5,840. M. C. Dibble and others' No. 1 H. E. Bonebrake, 150 feet south and 2,640 feet west of NE cor. of Section 115, Block 8, H. & G. N. Survey. Pecos Big Three Oil Co.'s No. 1 A. G. Robertson, 1,600 feet SW of NE line and 2,310 feet NW of SE line of Section 28, Block 10, H. & G. N. Survey.

Shackelford County

Cato Oil & Gas Co.'s No. 1 J. B. Matthews, 600 feet north and east of SW cor. of the N half of NW Section 27, Block 10, E. T. R. R. Survey. Gibson & Murphy's No. 1 J. B. Matthews, 150 feet north and east of SW cor. NW NE Section 58, Block 10, same survey. H. Gwinnup and others' No. 1 W. H. Green, 660 feet south and west of NE cor. NW SW Section 63, Block 12, T. & P. Survey. A. J. Hughes and others' No. 1 W. N. Sanders, 150 feet NW of SE line and 150 feet NE of SW line of Section 555, and located in T. E. & L. Survey. Marland Oil Co.'s No. 1 E. H. Holstein, 150 feet north and west of SE cor. NE Section 39, Block 14, T. & P. Survey. Republic Production Co.'s No. 4 Eli Myer, 150 feet south and 4,405 feet west of NE Section 1, G. H. & H. Survey. Sinclair Oil & Gas Co.'s No. 4 J. H. Hall, 150 feet west of SE cor. and located south line of Section 47, Block 10, E. T. R. R. Survey; No. 5, 150 feet south of NW cor. and located west line of Section 123, Block 10, same survey. Somer and others' No. 1 E. E. Crothe, 330 feet NW of SE line and 150 feet NE of SW line of NE 80 acres of NW 160 acres of Section 566, T. E. & L. Survey.

Stephens County

McKinley and others' No. 1 D. S. Mitchell, 2,640 feet south and 250 feet west of NE cor. of the W half of Section 64, Block 4, T. & P. Survey. Phillips Petroleum Co.'s No. 1 S. H. Post, 330 feet south and 660 feet east of NW cor. of the N half of the NE half of Section 39, Block 6, same survey.

Sterling County

L. Little's No. 1 Fisher Brothers, 2,310 feet north and 330 feet west of SE cor. of Section 1, Block T, T. & P. Survey.

Throckmorton County

O. J. Woolens and others' No. 1-A W. R. Rogers, 1,850 feet south and 3,150 feet west of NE cor. of J. Poitevent Survey, No. 1, A-242. Cranfill & Reynolds' No. 2 D. B. Thomas, 660 feet south and 200 feet west of NE cor. SW Section 261, B. B. B. & C. Survey. D. W. Moore and others' No. 1 J. A. Mathews, 2,800 feet NE of SW line and 300 feet NW of SE line of Section 480, T. E. & L. Survey.

Upton County

Dixie Oil Co.'s No. 24 A. S. Burleson, 990 feet north and 330 feet west of SW cor. of Section 3, G. C. & S. F. Survey, A-212, and located in J. Nidever Survey, No. 2, A-749. Simms Oil Co.'s No. 1 B. C. Clark, 330 feet south and west of NE cor. of the S half of Section 5, G. C. & S. F. Survey, Certificate No. 3,590.

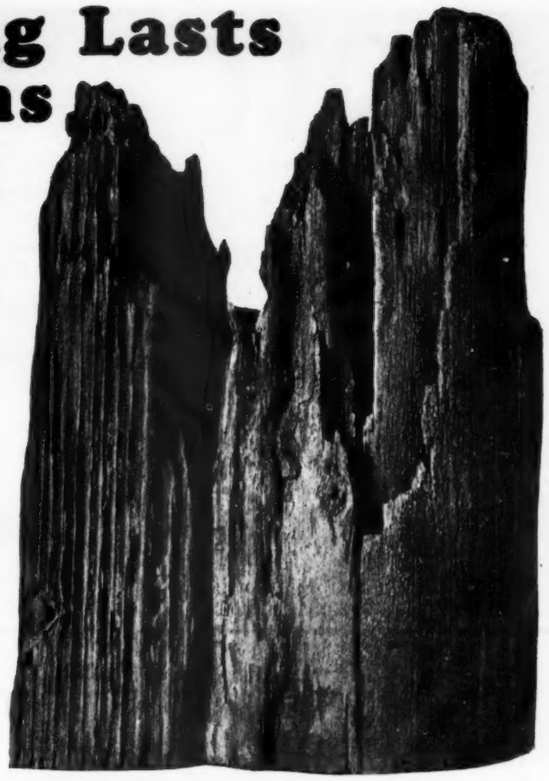
Wichita County

E. H. Mount and others' No. 1 J. L & T. J. Waggoner, 200 feet north and 150 feet west of SE cor. of Lot 10, Hezekiah George Survey, A-454. Murchison Oil Co.'s No. 1 Rio Bravo Oil Co., 150 feet north and 650 feet east of SW cor. of west 80 acres of NE Section 15, Block 7, H. & T. C. Survey. John O'Neil's No. 1 W. H. Chilson, 150 feet north and east of SW cor. of Section 6, League 4, Denton County School Land, A-417. The Texas Company's No. 325 W. T. Waggoner, 1,650 feet south and 2,375 feet east of SW cor. of Section 19, G. C. & S. F. Survey, A-359, and located in Section 20, G. C. & S. F. Survey, A-606; No. 325, 155 feet south and 595 feet west of NE cor. of Section 33, Block 5, H. & T. C. Survey, being 155 feet south and 150 feet east of NW cor. of their 70-acre lease.

Wilbarger County

Atlantic Oil Producing Co.'s No. 1 F. Fluhman-A, 315 feet south of the south

Where Wood Decking Lasts Only Eighteen Months



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Will consider a bid all or any portion.

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line of Block 9, H. & T. C. Survey and 1,260 feet east of the west line of F. Fluhman's 160-acre tract and located on A. O. P. company's Lease "A," out of W. A. McKinney Survey. Golding-Cochran and others' No. 1 W. T. Waggoner, 150 feet south and east of NW cor. of north 80 acres of south 240 acres of the W half of Section 104, Block 14, H. & T. C. Survey. Humble Oil & Refining Co.'s No. 1 R. T. Belcher, 150 feet north and west of SE cor. of east 40 acres of south 100 acres of SE Section 19, Block 9, H. & T. C. Survey. Murchison Oil Co.'s No. 2 W. T. Waggoner-B, 550 feet south and 150 feet east of NW cor. SE NE Section 51, Block 4, H. & T. C. Survey.

Winkler County

Independent Oil & Gas Co.'s No. 1 T. G. Hendricks-A, 330 feet south and east of NW cor. of the W half of SW Section 34, Block B-5, Public School Land.

Young County

Bridwell & Heydrick's No. 1 W. L. Groves, 150 feet south and east of NW cor. Section 1,491, T. E. & L. Survey. Reed and others' No. 5 J. W. Jack-B, 1,520 feet south and 1,640 feet east of NW cor. Section 23, Young County School Land, A-1,284; No. 1 J. W. Jack-C, 150 feet north and east of SW cor. NE Section 23, same school land. Phillips Petroleum Co.'s No. 2 R. B. Whittenburg, 850 feet north and 200 feet west of SE cor. of the W half of J. W. Howard Survey, A-1,600. Huthada Oil Co.'s No. 4 E. C. Stovall, 150 feet south and east of NW cor. of Lot 31, E. C. Stovall Subdivision of J. Tobin Survey, A-297; No. 5, 150 feet south and west of NE cor. of Lot 29, E. C. Stovall Subdivision, same survey.

CORRECTED LOCATIONS

Archer County

C. W. Boller and others' No. 1 R. E. Farmer, 850 feet north and 1,450 feet west of SE cor. of R. E. Farmer's 845-acre tract out of William Baker Survey, A-15, being 200 feet north and 150 feet east of SE cor. of Lot 18.

Cooke County

Petroleum Investment Co.'s No. 1 Hire & Seagraves, 5,600 feet north and 4,030 feet east of SW cor. of N. Nail Survey, A-790.

Wichita County

Grayce Oil Co.'s No. 2 E. Daume, 455 feet south and 1,435 feet west of NE cor. of Section 1, S. P. R. R. Survey, A-266; No. 3, 455 feet south and 1,155 feet west of NE cor. of the same section.

COMPANY PRODUCTION IN WEST TEXAS AREAS

WEST TEXAS
DAILY AVERAGE PRODUCTION
Week Ending April 30, 1927
CRANE COUNTY

Company—	Lease—	Wells	Prod.
Church and others, University		1	125
Church & Weekly, University		1	1,545
Cromwell, et al, University		1	930
Eastland Oil Co., University		4	6,900
Gulf Prod. Co., J. T. McElroy		8	6,500
	Crier-McElroy	8	3,980
	State-Lasseter	7	2,840
Humble O. & R. Co., University		8	7,420
Independent O. & G. Co., Hughes		1	10
	University-A	1	1,380
McMan O. & G. Co., Hughes		2	150
Magnolia Pet. Co.—			
	University-Hardwick	1	15
	University-O'Keefe	5	320
	State-Lasseter	2	46
Magnolia Pet. Co., et al—			
	University	4	135
Marland Oil Co., Cowden-A		3	110
	Cowden-B	1	125
	Durham	3	20
	Hughes-C	3	64
	Hughes-D	6	925
	Hughes-Gibbs	2	33
Prairie Oil & Gas Co.—			
	University	6	410
	State-Lasseter	1	75
Simms & Atlantic—			
	University-A	4	4,110
	University-B	1	82
	University-C	1	685
	University-D	1	1,200
Stidham & Thrasher, University		1	10
The Texas Company—			
	King	9	365
	Union Land-F	1	7
Tidal Oil Co.—			
	University-B	2	108
	University-C	1	40
	University-E	1	60
	University-F	4	5,310
Totals		105	46,035

Crockett County

Cromwell, et al, Powell		5	150
Gulf Prod. Co.—			
	Powell-A	4	45
	Powell-D	1	90

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American Central Insurance Co., St. Louis, Mo.
American Eagle Fire Ins. Co., New York, N. Y.
Automobile Insurance Co., Hartford, Conn.
Ben Franklin Underwriters, Pittsburgh, Pa.
Boston Insurance Co., Boston, Mass.
Caledonian Insurance Co., Edinburg, Scotland
California Insurance Co., San Francisco, Calif.
Camden Fire Insurance Association, Camden, N. J.
Carolina Insurance Co., Wilmington, N. C.
Central States Fire Ins. Co., Wichita, Kans.
Citizens Insurance Co., St. Louis, Mo.
City of New York Insurance Co., New York, N. Y.
Columbia Insurance Co., Jersey City, N. J.
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Commercial Union Assurance Co., London, Eng.
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Commonwealth Insurance Co., New York, N. Y.
Concordia Fire Insurance Co., Milwaukee, Wis.
Connecticut Fire Ins. Co., Hartford, Conn.
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Continental Insurance Co., New York, N. Y.
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Eagle Star & British Dom. Ins. Co., Ltd., London, Eng.
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Federal Union Insurance Co., Chicago, Ill.
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Firemens Underwriters, Newark, N. J.
Franklin Fire Insurance Co., Philadelphia, Pa.
Girard Fire & Marine Ins. Co., Philadelphia, Pa.
Girard Underwriters, Philadelphia, Pa.
Glens Falls Insurance Co., Glens Falls, N. Y.
Great American Ins. Co., New York, N. Y.
Hanover Fire Insurance Co., New York, N. Y.
Harmonia Fire Insurance Co., Buffalo, N. Y.
Hartford Fire Insurance Co., Hartford, Conn.
Home Fire & Marine Ins. Co., San Francisco, Cal.
Home Insurance Co., New York, N. Y.
Hudson Insurance Co., New York, N. Y.
Imperial Assurance Co., New York, N. Y.
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Insurance Co. of State of Pennsylvania, Philadelphia, Pa.
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New York Underwriters Ins. Co., New York, N. Y.
Niagara Fire Ins. Co., New York, N. Y.
North British & Mercantile Ins. Co., London, Eng.
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Old Colony Ins. Co., Boston, Mass.
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Reliance Insurance Co., Philadelphia, Pa.
Rochester Dept. of Great American, New York, N. Y.
Royal Exchange Assurance Co., London, Eng.
Royal Insurance Co., Ltd., Liverpool, Eng.
Scotch Underwriters, Edinburg, Scotland
Scottish Union & National Ins. Co., Edinburg, Scotland
Security Insurance Co., New Haven, Conn.
Sentinel Fire Insurance Co., Springfield, Mass.
Springfield Fire & Marine Ins. Co., Springfield, Mass.
St. Paul Fire & Marine Ins. Co., St. Paul, Minn.
Star Insurance Co. of America, New York, N. Y.
Sun Insurance Office, London, Eng.
Svea Fire & Life Ins. Co., Gothenburg, Sweden.
Superior Fire Ins. Co., Pittsburgh, Pa.
Travelers Fire Insurance Co., Hartford, Conn.
Union Assurance Society, London, Eng.
Union Insurance Society of Canton, Hong Kong
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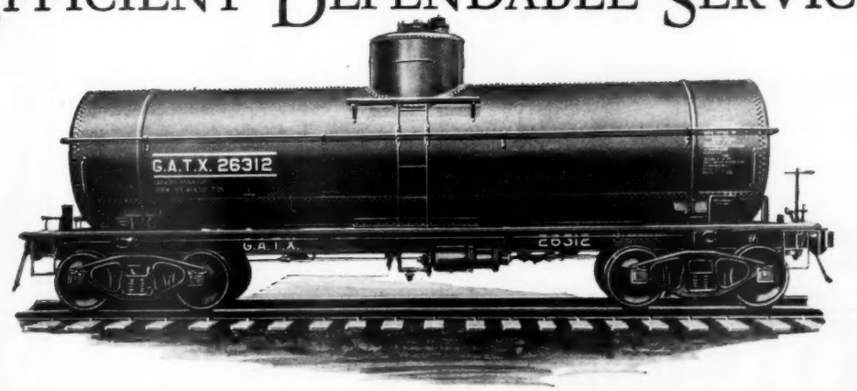

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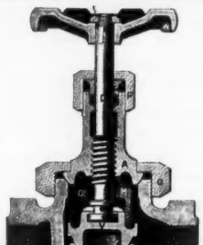
FIG. 190
Globe Valve for 150 and X. H. 250 pounds W. S. P. Sizes ¼ to 3-inch.

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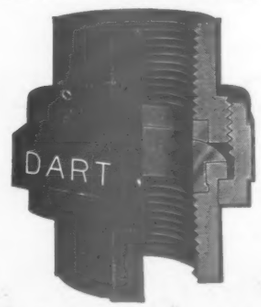

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J. K. Hughes—		
Powell-A	3	185
Powell-B	1	40
Humble O. & R. Co. and Marland Oil Co.—		
Powell	9	804
Serg	1	40
Powell-B	1	55
Republic Prod. Co., Powell	2	185
Roxana Pet. Corp., Powell	1	18
Totals	28	1,612
Ector County		
J. S. Cosden, Connell-A	1	20
Garza County		
Emerald Oil Co., J. M. Boren	1	6
Glasscock County		
Texon-Marland, Settles	1	0
Howard County		
Bristow & Merrick, A. J. Hooks	2	150
Choate & Henshaw, O'Daniel	..	.....
Comet Pet. Co., H. R. Clay	1	30
Dixie Oil Co., H. R. Clay	1	26
Gulf Prod. Co., Chalk	1	30
Humble O. & R., Douthit	2	47
Lockhart & Co., Chalk & Chalk-A	3	102
Lockhart & Carey, Scott	1	16
Magnolia Pet. Co.—		
Chalk	4	165
Hyman Chalk	2	30
Mary Chalk	4	205
Otis Chalk	7	270
Sarah Hyman	2	60
Sloan Chalk	1	47
O'Daniel (was Choate & Henshaw)	1	40
Marland Oil Co.—		
Chalk	10	284
Chalk-A	7	316
H. R. Clay-A	4	125
H. R. Clay	5	331
Otis Chalk-B	1	60
Otis Chalk-C	1	46
Otis Chalk-D	1	49
Otis Chalk-E	1	200
H. R. Clay-B	1	28
Reeves & Apperson, H. R. Clay	2	177
Tidal Oil Co., Otis Chalk	1	25
Totals	66	2,859
Jones County		
Atlantic Oil Prod., Howell	1	60
Marland Oil Co., Mason	3	692
Midwest Expl. Co., Thornston	4	420
Phillips Pet. Co.—		
Tessie-Walling	3	402
Winters	2	384
R. M. Beasley	1	101
J. C. Mason	1	186
Totals	15	2,245
Loving County		
Lockhart & Co., Allen	1	20
Mitchell County		
Atlantic Oil Prod., Womack	8	462
California Co., All Leases	81	2,818
F. J. Carey, et al., E. Morrison	1	12
Eastland Oil Co., All Leases	9	310
Magnolia Pet. Co., All Leases	19	621
Tidal Oil Co., All Leases	2	23
Totals	120	4,246
Pecos County		
Mid-Kansas O. & G.—		
Yates-A	3	230
Yates-B	1	260
Texon O. & L. Co., Yates	1	10
Totals	5	500
Reagan County		
Big Lake Oil Co., University	103	17,930
Texon O. & L. Co., University	72	7,278
Totals	175	25,208
Scurry County		
Northwest Oil Co., All Leases	4	27
Upton County		
Amerada Pet. Corp., Hughes	5	417
Atlantic O. P. Co., Sherk	1	35
Dixie Oil Co.—		
Burleson	17	2,615
Hughes	10	321
Gulf Prod. Co.—		
Baker	1	5
Baker-B	2	100
Estep	2	300
Hughes	4	150
Lane-C	1	140
J. T. McElroy-B	1	10
Sherk	1	110
Humble Oil & Ref. Co.—		
Burleson	4	52
Ricker	3	345
Independent O. & G. Co.—		
Burleson	5	51
Taylor	10	519
Wooley	10	793
McMan Oil & Gas Co., Baker	1	6
Marland Oil Co.—		
Baker-A	1	25
Benton Land	1	20
Burleson	31	988
Burleson-A	3	10
Burleson-B	1	8
Estep	8	660
Hughes-B	1	0
Keith	3	220
Sanger	20	382
Shirley	4	568
Powell	4	360
Shirley-A	1	20
Gibbs	2	210
Prairie Oil & Gas Co.—		
Lane	4	637
Lane-C	1	450
Republic Prod. Co., Baker	5	118
Rio Grande Oil Co., Estep	1	0
Roxana Pet. Corp.—		
Bowen	17	3,630
Estep	3	94
Hughes	10	597
Simms Oil Co., Shirley	3	145
Sun Oil Co., Burleson & Baker	10	225
The Texas Company—		
Burleson	4	60
King	12	452
Texon Oil & Land Co., Sherk	1	25
T. P. Coal & Oil Co.—		
Sherk	4	130
Lane-A	6	2,420
Lane-B	1	60
Wentz Oil Corp., Sherk	3	175
Totals	243	18,659
Winkler County		
Southern Crude Oil Co., Hendricks	2	1,111

RECEIVER'S SALE

By virtue of an order of sale issued out of the 4th Judicial District Court for Anderson County, State of Kansas, I will, upon Monday the 23rd day of May, 1927 at one o'clock P. M. at the west front door of the Court House in the City of Garnett, Anderson County, Kansas, offer for sale at public auction, and sell to the highest bidder for cash in hand, the following property located in Anderson County, Kansas:

Parcel No. 1: An oil and gas lease on the west sixty acres of the North Half of the Southwest Quarter of Section 3, Township 22, Range 19, appraised at $900.00.

Parcel No. 2: An undivided one-half interest in an oil and gas lease and production thereon on the east twenty acres of the North Half of the Southwest Quarter of Section 3, Township 22, Range 19, together with all production and equipment thereon, appraised at $3,000.00.

Parcel No. 3: An undivided three-fourths interest in an oil and gas lease covering the southeast quarter of the northeast quarter of Section 16, Township 21, Range 20, together with all production and equipment thereon; appraised at $2,812.50.

Parcel No. 4: An undivided one-half interest in an oil and gas lease on the west half of the northwest quarter of Section 15, Township 21, Range 20, and all production and equipment thereon; appraised at $6,562.50.

Parcel No. 5: An undivided one-half interest in an oil and gas lease covering the east half of the northwest quarter of Section 15, Township 21, Range 20, together with all production and equipment thereon; appraised at $26,250.00.

JOHN C. KEYS, Receiver
Garnett, Kansas

NB.—The Prairie Oil & Gas Company's oil run reports on above leases for the months of March and April, 1927 will be filed with the Clerk of the District Court of Anderson County, Kansas on May 12, 1927.

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The Oil and Gas Journal
Tulsa, Okla.

Gulf Prod. Co., Hendricks	1	330
Totals	3	1,441

DAILY AVERAGE PRODUCTION
AMARILLO DISTRICT
Week Ending April 30, 1927
Hutchinson County

Company—	Wells	Daily Av.
Antelope Creek Oil Co.	1	15
Alaska Pet. Co.	1	15
Amerada Pet. Corp.	9	695
American Ref. Co.	8	420
Apex Oil Co.	2	420
Atlantic O. O. (was Grimes & Watts)	1	30
Badger Oil Co.	2	70
Bain and others	1	85
Barnsdall Oil Co.	2	200
R. G. Barnum	1	50
Black Diamond Oil Co.	1	10
Blockins & Kistler	2	155
Buffalo Oil Co.	2	90
Canadian River Oil Co.	6	230
Center Dome Oil Co.	2	10
Centerfield Oil Co.	1	5
Coble-Whittenburg	4	360
Continental Oil Co.	1	0
Currie Bros. & J. R. Phillips.	4	700
Cockrell & McIroy	6	3,030
Collier & Taylor	1	0
Delmar Oil Co.	2	20
Derby Oil Co.	8	2,150
Devonian Oil Co.	9	500
Dixon Creek Oil Co.	41	7,960
Dominion Oil Co.	1	0
Double Five Oil Co.	1	40
Donald Oil Co.	1	0
Douglas Oil Co. and Cline	2	10
E. J. Dunnigan and others	2	150
Echo Oil Co.	3	1,740
Empire Gas & Fuel Co.	27	2,670
Fly Blackburn Oil Co.	2	70
Four Y Oil Co.	1	10
Franterhouse & Wetzel	2	50
Gates Oil Corp. (F. E. Kistler)	4	160
Goldelline Oil Co.	6	450
Gopher Oil Co.	1	30
Golding & Phillips	1	0
Gulf Prod. and Panhandle Ref. Co.	54	5,755
Gulf Prod. Co.	36	4,110
L. R. Hagy	1	0
Heywood and others	1	0
J. K. Hughes Dev. Co.	22	1,350
Holmes, Currie & McKnight.	3	190
W. H. Holmes	2	140
Homestead Oil Co.	1	0
Hutchinson Co. Oil Co.	1	0
Dan A. Japhet	5	400
Julian Pet. Corp. (Canyon)	5	750
Kistler Oil Co.	3	400
Kistler & Lenix	2	450
Lenix Oil Co. and others	1	50
J. H. Lenix	1	0
Lenix & Patterson	2	320
Lucky 10 Oil Co.	4	100
Magic 80 Oil Co.	1	15
Manhattan Oil Co.	1	20
Marland Oil Co.	57	3,395
Midwest Exploration Co.	20	3,120
Minnehoma Oil Co. and Kistler	3	1,110
McMan Oil & Gas Co.	22	2,650
McIlroy & Herring	6	1,025
S. D. McIlroy	4	150
S. D. & W. W. McIlroy	8	730
McIlroy Bros. and others	4	510
J. H. Middleton	1	150
Mudge Oil Co.	1	0
Fain-McGaha Oil Corp.	2	125
Newby Oil Co.	2	60
New Domain Oil Co.	3	90
Pantex Oil Co. (Westex)	9	1,200
Phillips & Heywood	3	695
Panhandle Oil Co.	1	0
Paramount Oil Co.	1	1,060
J. R. Phillips and others	5	1,605
Phillips Pet. Co.	210	25,890
Prairie Oil & Gas and Phillips Pet. Co.	66	10,770
Plains Drilling Co.	1	10
Pure Oil Co.	3	450
Relief Oil Co.	3	460
Renry Riley	1	0
Riley & Holmes	2	120
Rock Island Oil Co.	1	0
Roxana Pet. Corp.	9	520
Ryan Pet. Corp.	4	275
Skelly Oil Co.	26	2,155
Skiatex Oil Co.	7	800
J. L. Smith	2	180
Smith & Barnum	2	35
Southwestern Oil & Dev. Co.	5	795
Spring Creek Oil Co.	4	440
Summit Oil Co.	3	270
Sunny Jim Oil Co.	5	230
Sunburst Oil Co.	2	100
Sunrise Oil Co.	1	0
J. A. Swindler & Son	1	0
The Texas Company	1	35
Tex-O Oil Co.	1	15
Travelers Oil Co.	3	275
Triangle Oil Co.	5	600
J. D. Ward and others	3	120
White Eagle Oil & Ref. Co.	26	1,610
Total Hutchinson County	871	100,480
Average per well		115.7

Carson County

Amarillo Oil Co.	1	0
American Ref. Co.	9	660
Champlin Ref. Co.	5	230
Delmar Oil Co.	1	35
Empire Gas & Fuel Co.	3	150
Gates Oil Corp.	1	5
Gulf Prod. Co.	21	1,175
Hughes Dev. Co.	1	0
Magnolia Pet. Co.	1	65
Marland Oil Co.	21	1,510
Marston Oil Co.	1	100
McMan Oil & Gas Co.	9	2,130
Nunn & McAuley	6	1,125
Parks and others	3	250
Prairie Oil & Gas Co.	6	1,710
Republic Prod. Co.	1	15
Roxana Pet. Corp.	11	1,415
W. W. Silk and others	2	60
Skelly Oil Co.	4	1,010
Southwest Oil & Dev. Co.	1	10
Sunny Jim Oil Co.	2	10
The Texas Company	14	430
Total Carson County	132	12,095
Average per well		99.9

Gray County

Canyon Oil Co.	1	5

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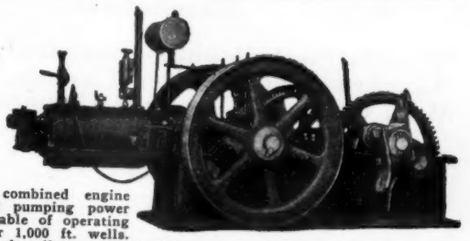

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Gulf Prod. Co.	14	1,105
Humble Oil & Ref. Co.	11	505
Magnolia Pet. Co.	19	385
McMan Oil & Gas Co.	10	510
Marland Oil & Gas Co.	1	25
Nabob Oil Co.	1	70
Osborne & Daniels	1	10
Phillips Pet. Co.	7	615
Prairie O. & G. and Atlantic and Shamrock	15	1,285
Pure Oil Co.	5	200
Roxana Pet. Corp.	1	0
Sun Oil Co.	3	90
The Texas Company	5	285
Wilcox-Pampa Oil Co.	20	2,120
Young and others	1	10
Total Gray county	119	7,305
Average per well		61.3
Moore County		
Cadman and others	1	0
Potter County		
Amarillo Oil Co.	1	30
Wheeler County		
Continental Oil Co.	3	400
Gibson Oil Corp.	7	790
Laycock and others	1	0
Magnolia Pet. Co.	5	360
Marland Oil Co.	1	400
Mid-Continent Pet. Corp.	1	15
Fain & McGaha	1	40
Mid-Kansas Oil & Gas Co.	2	450
Midwest Exploration Co.	2	5
World Oil Co.	2	40
Tidal Oil Co.	1	675
The Texas Company	2	90
Total Wheeler County	29	3,265
Average per well		112.5
Grand total Panhandle	1,143	123,175
Average per well		107.7

EDUCATING EMPLOYES OF GAS COMPANIES

(Continued from Page 64)

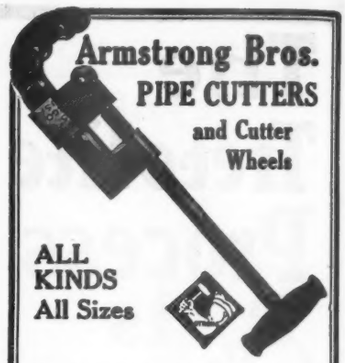
to make some special efforts in instructing or acquainting them with our operations, but it has been our experience that the results are very gratifying.

Another phase of the studied education of employes may be classed as inspirational education; that is, impressing upon them that those principles which apply to life also apply to business. Our success in business is governed by such traits as honesty, courtesy, fair play, initiative, dependability and many others, and the company's success, therefore, depends upon these same qualities. This educational work is generally carried on through the medium of posters, bulletins, or personal cards provided by a company specializing in this business. If it can take the form of a personal message from one in the company who is respected and admired the desired results will more likely be achieved. A stereotyped impersonal appeal may do more harm than good. That there is "a time and place for everything" is only too true of educational work of this kind. If the proper type is chosen and good judgment exercised in its use, gratifying results can undoubtedly be obtained.

The aim of any educational program is primarily to enable an employe to acquit himself creditably in business life. That he may do this it is of fundamental importance that he has a clear conception of the nature of the business in which he is engaged. Notwithstanding that the natural gas utility business does not vary, the employes' conception of it in separate companies and even in the same company may differ radically. As our attitude toward our duties is affected by our conception of them, this conception should be the one which will be most effective in producing the desired results.

If we could make a survey of our industry, I venture to say that we would receive some highly illuminating answers to the inquiry: "What is the business of your company?" Some would say: "We supply gas to our customers," others, "We sell gas service," and so on.

The conception that we "supply gas" has undoubtedly arisen from the great usefulness of natural gas and the ready demand for it. Its uses are manifold, and its introduction to a community generally is met with a demand that approached and in some cases exceeded the supply. We had to expend little effort in getting rid of the gas produced. Customers came to us for it. But do we, at this stage of the industry, want our customers to come to us on suppliant knee for natural gas? And more important, in this day of keen competition, will they do it? Isn't the thought of "supply" creative of an "I don't care," "take it or leave it" attitude, which we regret exceedingly when



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we come to discuss the question of rates with our customers?

"Gas Sales"

The term "selling service" has come into common usage not only in our business but in hosts of others. But the average employe does not know what "selling service" means; it does not create a definite concrete picture in his mind which is needed if the employe is to perform in a pinch.

Now, why should we not consider our business as selling gas? "Gas sales" is the wording in our financial statement and the figures following it are given the closest scrutiny. "Sell more gas" are the directions constantly being given to our commercial departments. Why shouldn't every employe be a salesman and why shouldn't we have that conception of our company's business? A close analysis will reveal that our business differs from that of the merchant only in minor details. The fundamental principles are the same. To achieve the utmost success in our business we could profitably take some leaves from the ledger of the successful merchant. His primary object is to sell merchandise at a profit. He recognizes that his merchandise must be thoroughly dependable and that he must have good salesmen and efficient management. To achieve the maximum sales results all of his employes are instructed as salesmen, some, of course, receiving more specialized instructions than others. And what does a good salesman realize as fundamental to his success? Courtesy, satisfaction and prompt action. A salesman cannot sell merchandise through discourtesy, dissatisfaction and slipshod methods.

We like to trade with a live, progressive and successful merchant. I believe the public's reaction toward a utility company will be the same, if we occupy a similar position.

Every Employe a Salesman

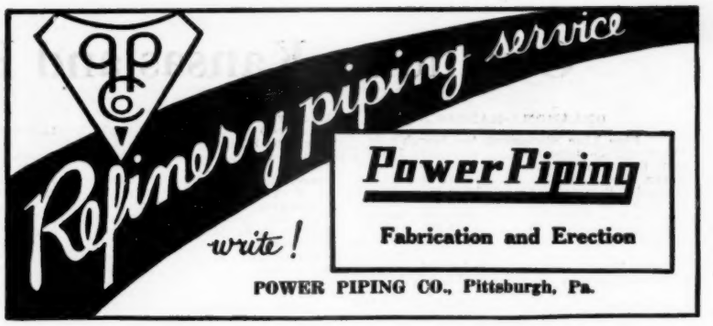
Therefore, will we not achieve the desired results, efficient conduct of our business through a fundamental understanding on the part of our employes, a spirit of good will on the part of our customers, and increasing gas sales, if every employe is a salesman and educated to think of our business as "selling gas?"

That we might bring this conception of our business before the employes of the Columbia System companies operated from Cincinnati, we have made available to them this booklet, "Every Employe a Salesman." This booklet provides a means by which the employe may report a prospect for an appliance sale who will be called upon by one of our salesmen. Commissions are paid if the sale is made. In the back forms are provided on which inquiries or complaints from customers may be reported. Through the medium of bulletins issued periodically, the first of which is entitled "Building Sales, Bettering Service," we are trying to keep every employe in close touch with the activities of our sales departments, so that he may perform his work with "sales" idea in mind.

We believe that a meter reader or meter settler who realizes that his company is selling gas, which must be done through appliances, and that he is an important part in that sales organization, will not enter a home with muddy shoes, but will present a neat appearance, will remove his hat and have a pleasant word for the housewife and children; a clerk will realize that a complaint must be adjusted promptly and satisfactorily and so on throughout the entire organization.

I understand that this plan is not new, having been in use in some companies for a number of years, but we shall be glad to give any details to those who might be interested.

To sum up, I would like to recommend for your consideration in any educational program; the importance of our example to fellow employes; the desirability of a certain amount of inspirational education; complete assistance in acquiring knowledge, and the necessity of a conception of our business that will be effective in producing the desired results.



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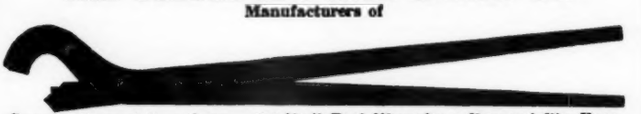

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RITER-CONLEY COMPANY
General Offices—Pittsburgh, Pa.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for March

*Prairie Pipe Line Co.	4,526,000	146,000
Gulf Pipe Line Co.	1,730,030	55,807
Texas Pipe Line Co.	963,602	31,084
Magnolia Petroleum Co.	1,958,831	63,188
Empire Pipe Line Co.	1,224,802	39,510
Cosden Pipe Line Co.	999,649	32,247
Sinclair Pipe Line Co.	2,579,200	83,200
*Other lines	12,170,600	392,600
Total March	26,152,714	843,636
Total February	23,108,690	825,340
Difference	3,044,024	8,296

Shipments

†Prairie Pipe Line Co.	5,449,688	175,796
Gulf Pipe Line Co.	1,347,517	43,468
Texas Pipe Line Co.	560,970	18,096
Magnolia Petroleum Co.	1,260,525	40,662
Empire Pipe Line Co.	1,029,203	33,200
Cosden Pipe Line Co.	1,055,871	34,060
†Sinclair Pipe Line Co.	2,551,515	82,307
*Other lines	11,625,000	375,000
Total March	24,880,289	802,589
Total February	22,434,230	801,223
Difference	446,059	1,366

Stocks

*Prairie Oil & Gas Co.	29,300,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line and Gypsy Oil Co.	7,933,870
The Texas Company	3,927,695
Magnolia Petroleum Co.	4,585,518
Empire Pipe Line Co.	2,831,329
Cosden Pipe Line Co.	2,286,291
*Sinclair Crude Oil Pur. Co.	19,000,000
Carter Oil Co.	14,394,388
*Other lines	10,200,000
Total March	96,459,101
Total February	93,518,283
Difference	2,940,818

*Estimated. †Prairie Pipe Line shipments include Texas crude and Sinclair Pipe Line shipments include Wyoming and Texas crude. Note—Stocks do not include approximately 3,500,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 2,200,000 bbls. of Texas Panhandle crude in storage in Oklahoma and Kansas.

EASTERN PIPELINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb. '27	Mar. '27
Nat. Transit	139,482.60	163,378.72
S. W. Pa. P. L.	86,131.61	100,592.96
Eureka P. L.	360,073.04	416,053.14
Buckeye P. L. (Macksburg)	306,133.22	360,086.67
Buckeye P. L. (Cleve.)	9,661.18	12,262.69
Buckeye P. L. (Lima, etc.)	118,280.52	126,642.07
Indiana P. L.	10,308.90	10,472.58
Cumberland P. L.	263,098.35	376,896.95
N. Y. Transit	20,720.01	24,065.99
Tidewater P. L.	166,244.50	189,659.31
Pure Oil	150,656.96	175,516.93
Emery P. L.	50,806.49	57,577.05
Paragon Dev.	27,518.82	29,944.63
Pittsburgh P. L.	5,450.00	5,324.14
Stoll Ref.	11,799.41	12,195.78
Total	1,716,345.62	1,960,669.62
Daily average	61,298.06	63,247.41

Note—Indian Refining Co., also reported other receipts of 377,549.03 bbls. Paragon Refining Co. had other receipts of 106,958.30 bbls. Paragon Development had other receipts of 2,451.55 bbls. Pure Oil had other receipts of 19,249.43 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb. '27	Mar. '27
Nat. Transit	301,540.53	371,407.93
S. W. Pa. P. L.	332,520.45	394,577.29
Eureka P. L.	189,772.61	186,306.27
Buckeye P. L. (Macksburg)	143,321.85	162,229.20
Buckeye P. L. (Cleve.)	735.84	1,218.35
Buckeye P. L. (Lima, etc.)	766,275.55	851,500.60
Indiana P. L.	899,418.14	995,741.13
Cumberland P. L.	149,258.83	128,346.83
N. Y. Transit	134,606.31	97,577.19
Northern P. L.	149,470.27	161,689.55
Tidewater P. L.	118,783.21	108,290.33
Pure Oil	187,941.11	158,078.86
Emery P. L.	48,549.33	55,643.19
Paragon Ref.	125,377.69	103,362.66
Indian Ref.	296,638.10	329,602.47
Paragon Dev.	29,126.84	35,811.95
Pittsburgh P. L.	6,213.32	5,716.31
Total	3,878,949.98	4,147,099.11
Daily average	138,533.93	133,777.39

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of February and March were as follows:

	Feb. '27	Mar. '27
Nat. Transit	1,009,705.83	987,165.64
S. W. Pa. P. L.	746,374.61	716,181.84
Eureka P. L.	1,326,061.87	1,438,177.29
Buckeye P. L. (Macksburg)	435,819.09	457,603.45
Buckeye P. L. (Cleve.)	76,981.10	41,573.95
Buckeye P. L. (Lima, etc.)	3,227,532.22	3,545,161.61
Indiana P. L.	584,982.76	592,303.39
Cumberland P. L.	606,176.77	583,381.33
Southern P. L.	420,485.22	458,081.93
N. Y. Transit	661,277.88	803,836.11
Northern P. L.	426,553.78	485,204.86
Pure Oil	459,193.89	498,169.44
Emery P. L.	6,932.77	7,599.54
Indian Ref.	91,469.58	141,081.41
Paragon Dev.	11,007.61	8,085.46
Pittsburgh P. L.	3,679.88	3,449.67
Total	10,119,162.36	10,794,043.63
Increase	401,159.36	674,881.27

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of February and March showing the gross stocks of the above fields:

	Feb. '27	Mar. '27
Penna.	3,708,705.44	3,731,445.01
Lima	798,170.33	810,425.15
Kentucky	1,056,874.37	1,067,209.97
Mid-Continent	4,451,184.17	5,041,917.37
Illinois	104,428.05	143,046.13
Total	10,119,162.36	10,794,043.63

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
Jan.	62,638	56,831	55,630	56,209
Feb.	68,023	60,606	60,394	61,298
March	68,721	60,575	61,644	63,247
April	71,058	63,062	63,019	.....
May	63,942	59,217	60,580	.....
June	63,230	61,270	64,131	.....
July	64,208	62,639	63,206	.....
August	59,942	59,686	61,815	.....
Sept.	62,930	62,510	64,639	.....
Oct.	64,976	60,995	62,704	.....
Nov.	56,282	59,360	61,774	.....
Dec.	55,814	57,974	58,755	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1924	1925	1926	1927
Jan.	145,518	157,889	156,056	141,227
Feb.	148,732	160,863	159,488	138,534
March	147,098	154,591	160,239	133,777
April	147,611	151,429	152,371	.....
May	134,997	146,986	160,998	.....
June	143,010	149,467	160,267	.....
July	124,187	161,338	160,945	.....
August	123,120	161,730	151,929	.....
Sept.	127,325	156,719	158,915	.....
Oct.	123,170	145,388	161,132	.....
Nov.	124,400	143,582	152,668	.....
Dec.	151,392	160,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
Jan.	11,353,276	9,859,170	9,718,003
Feb.	11,192,924	9,579,354	10,119,163
March	11,156,297	9,432,292	10,794,044
April	11,062,032	9,805,851	.....
May	11,207,562	9,531,757	.....
June	11,093,796	9,585,904	.....
July	11,067,453	9,734,687	.....
August	10,974,481	9,668,947	.....
Sept.	10,781,753	9,433,732	.....
Oct.	11,036,850	9,269,806	.....
Nov.	11,068,158	9,257,667	.....
Dec.	10,458,445	9,464,512	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1926—	Runs	Shipmts.	Stocks
March	2,754.62	1,732.77	13,841.36
April	3,137.40	4,519.68	12,459.02
May	2,933.29	2,096.35	13,296.96
June	3,217.62	1,655.15	14,858.43
July	3,025.86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
Sept.	2,788.18	3,373.06	13,985.68
Oct.	2,991.86	2,307.75	14,671.25
Nov.	2,810.60	1,664.55	15,817.31
Dec.	2,847.52	5,561.11	13,103.73
1927—			
Jan.	2,641.54	1,470.42	14,274.84
Feb.	2,764.30	1,082.82	15,956.32
March	2,587.20	1,878.56	16,664.96

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, April 1	2,642,060.25
Runs from wells	698,541.65
Other receipts	255,909.08
Regular deliveries	462,602.82
Other deliveries	528,766.18

The amount of Illinois oil run by the Tidewater Pipe Co. in March was 29,052.26 bbls. and deliveries were 92,344.61 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1926—	Runs	Deliveries
March	753,300.74	524,625.95
April	616,957.04	437,604.00
May	682,416.67	498,456.90
June	693,102.34	558,054.94
July	713,490.66	490,092.82
August	701,795.92	555,766.59
September	688,798.66	516,083.05
October	681,648.96	531,467.39
November	651,263.33	498,439.37
December	668,909.58	587,947.61
1927—	Runs	Deliveries
January	621,421.02	530,085.98
February	595,831.16	476,950.71
March	727,593.91	554,947.43

Tide Water Pipe Co., Ltd., also delivered in March 255,560.39 bbls.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
December	13,645	7,139	39,645	7,419	9,774	77,613	.....	.....	.....	.....	.....	77,613
January	5,097	8,258	26,290	15,933	14,807	70,355	.....	.....	.....	806	806	71,161
February	26,214	3,036	32,750	8,571	18,250	88,821	.....	.....	.....	.....	.....	88,821
March	16,616	5,484	56,710	13,871	13,419	106,097	.....	.....	.....	484	.....	106,581

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
December	12,484	10,613	56,139	7,462	24,064	110,742	13,548	40,742	2,903	10,839	67,032	177,774
January	16,032	8,226	64,387	4,065	31,064	123,774	7,903	43,639	.....	4,123	55,645	179,419
February	12,000	14,429	87,286	5,331	26,714	145,750	4,786	46,786	2,143	3,607	57,322	203,072
March	4,677	13,161	63,484	9,226	26,129	116,677	6,742	36,258	2,419	4,871	50,290	166,967

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
March:	Month	18,825,726	14,312,886	11,014,323	3,324,837	5,116,837	1,889,636	3,161,250	3,349,000	61,002,520
	Daily average	606,283	461,706	355,298	107,577	166,027	60,956	101,976	108,032	1,967,536
April:	Month	18,091,771	14,468,190	10,799,760	3,230,120	5,127,610	1,959,570	3,231,404	3,183,000	60,191,325
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,239	106,100	2,006,377
May:	Month	18,667,144	14,507,008	11,940,797	3,516,640	5,482,939	2,221,938	3,459,489	3,317,000	63,132,955
	Daily average	602,166	467,968	385,187	113,440	176,869	71,998	111,596	107,000	2,036,224
June:	Month	18,269,417	14,075,510	11,782,200	3,346,470	5,064,760	2,206,838	3,437,905	3,265,000	61,546,092
	Daily average	608,981	469,117	392,740	111,549	168,822	73,561	114,597	112,167	2,051,536
July:	Month	18,743,199	14,657,483	13,933,945	3,682,327	5,019,893	2,173,818	3,336,464	3,420,000	64,917,076
	Daily average	604,619	472,822	451,089	118,557	161,932	70,123	107,634	110,322	2,094,099
August:	Month	18,765,080	14,618,236	17,093,586	3,681,436	4,878,191	2,190,739	3,467,697	3,338,506	68,024,465
	Daily average	605,325	471,556	551,406	118,756	157,361	73,896	111,538	107,726	2,194,338
September:	Month	18,104,954	14,466,510	17,580,100	3,450,060	4,603,330	2,079,840	3,141,123	3,330,000	66,755,817
	Daily average	603,498	482,217	586,003	115,002	153,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,058	15,730,689	19,001,388	3,714,627	4,626,138	2,166,559	3,071,720	3,398,000	70,664,189
	Daily average	611,808	507,119	612,948	119,827	149,198	69,889	99,088	109,613	2,279,490
November:	Month	19,173,138	15,376,950	18,593,160	3,592,490	4,398,490	2,064,911	2,942,587	3,316,000	70,649,798
	Daily average	639,104	562,565	619,772	119,782	143,316	68,497	94,752	107,200	2,354,990
December:	Month	20,276,950	17,382,908	19,753,591	3,654,156	4,266,189	2,018,754	3,658,301	3,313,000	73,823,829
	Daily average	654,095	576,868	637,212	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,184,872	19,030,745	18,546,990	3,668,323	4,076,469	1,905,570	2,610,303	3,332,500	73,355,772
	Daily average	651,125	613,896	598,290	118,333	131,499	61,471	84,203	107,500	2,366,315
February:	Month	17,982,711	19,752,343	16,483,292	3,349,416	3,574,256	1,784,104	2,385,125	2,907,200	68,218,462
	Daily average	642,240	705,441	588,689	119,622	127,652	63,718	85,183	107,400	2,439,945
	Total 12 months	226,051,070	190,367,462	186,572,861	42,221,902	56,133,891	24,662,244	36,793,578	39,570,200	803,373,208
	Daily average	619,313	521,554	511,159	115,677	153,792	67,513	100,804	108,413	2,198,288

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